bulkload前(橘色)下降的原因是前段不斷擴大

新舊range的中、前、前中幾乎一樣，但全部跟前中後的趨勢有點怪

Bulkload的區塊如果是集中的，lookup該區域就會很快(500-1000)

但一次bulkload差很多的區塊就會很慢(3000)

Bulkload中: 中500穩定，前後1500-2000稍微上升

Bulkload前: 前700穩定，中2000-2500起伏，後1500穩定

Bulkload前+中: 中不到500，前500上下，後1000-1500稍微上升

Bulkload前+中+後: 前300上下，中&後600-700起伏

單看中間lookup耗時，(前+中) < 中 < (前+中+後) ?? 還是純誤差?

單看前lookup耗時，(前+中+後) < (前+中) < 前

舊range 1中 2前 3 前中 4 前中後 5全部

range1(0.0, 10000.0); range2(1000000.0, 1001000.0); range3(1000000000.0, 1000010000.0);

2新range 1前 2前中 3前中後 4中 5全部

range1(0.0, 10000.0); range2(1000000.0, 10010000.0);

range3(1000000000.0, 1000010000.0);

* 1. 舊range bulkload中

90%

Total lookup time: 6.41436e+09 nanoseconds

front one lookup time: 1025.39 nanoseconds

middle one lookup time: 407.269 nanoseconds

back one lookup time: 741.743 nanoseconds

total retrain: 13.55 (loc & time cost recoeded)

80%

Total lookup time: 8.3009e+09 nanoseconds

front one lookup time: 1258.23 nanoseconds

middle one lookup time: 441.795 nanoseconds

back one lookup time: 1094.3 nanoseconds

total retrain: 14.85 (loc & time cost recoeded)

70%

Total lookup time: 1.38483e+10 nanoseconds

front one lookup time: 1324.62 nanoseconds

middle one lookup time: 823.156 nanoseconds

back one lookup time: 1381.35 nanoseconds

60

total retrain: 4.3 (loc & time cost recoeded)

Total lookup time: 1.2936e+10 nanoseconds

front one lookup time: 1500.75 nanoseconds

middle one lookup time: 674.769 nanoseconds

back one lookup time: 1466.37 nanoseconds

total retrain: 4.3 (loc & time cost recoeded)

60%

Total lookup time: 1.51292e+10 nanoseconds

front one lookup time: 1551.81 nanoseconds

middle one lookup time: 738.479 nanoseconds

back one lookup time: 1597.48 nanoseconds

total retrain: 15.26 (loc & time cost recoeded)

50%

Total lookup time: 1.6766e+10 nanoseconds

front one lookup time: 1769.85 nanoseconds

middle one lookup time: 749.59 nanoseconds

back one lookup time: 1487.06 nanoseconds

total retrain: 16 (loc & time cost recoeded)

40%

Total lookup time: 1.80124e+10 nanoseconds

front one lookup time: 1724.96 nanoseconds

middle one lookup time: 642.058 nanoseconds

back one lookup time: 1677.03 nanoseconds

total retrain: 16.59 (loc & time cost recoeded)

30%

Total lookup time: 2.09003e+10 nanoseconds

front one lookup time: 2030.1 nanoseconds

middle one lookup time: 736.42 nanoseconds

back one lookup time: 1573.6 nanoseconds

total retrain: 16.42 (loc & time cost recoeded)

20%

Total lookup time: 2.40982e+10 nanoseconds

front one lookup time: 2191.99 nanoseconds

middle one lookup time: 688.714 nanoseconds

back one lookup time: 1736.18 nanoseconds

total retrain: 16.67 (loc & time cost recoeded)

10%

Total lookup time: 2.66292e+10 nanoseconds

front one lookup time: 2194.63 nanoseconds

middle one lookup time: 670.461 nanoseconds

back one lookup time: 1853.06 nanoseconds

total retrain: 17.4 (loc & time cost recoeded)

* 1. 舊range bulkload 前

90%

Bulkload time: 1.04409e+09

Total lookup time: 3.53197e+10 nanoseconds

front one lookup time: 1167.02 nanoseconds

middle one lookup time: 2604.19 nanoseconds

back one lookup time: 2054.16 nanoseconds

total retrain: 5.34 (loc & time cost recoeded)

80%

Bulkload time: 1.70942e+09

Total lookup time: 2.91745e+10 nanoseconds

front one lookup time: 860.253 nanoseconds

middle one lookup time: 2317.27 nanoseconds

back one lookup time: 1291.82 nanoseconds

total retrain: 5.2 (loc & time cost recoeded)

70%

Bulkload time: 3.33542e+09

Total lookup time: 2.5698e+10 nanoseconds

front one lookup time: 975.822 nanoseconds

middle one lookup time: 2083.25 nanoseconds

back one lookup time: 1452.17 nanoseconds

total retrain: 5.59 (loc & time cost recoeded)

60

Bulkload time: 3.08045e+09

Total lookup time: 2.11537e+10 nanoseconds

front one lookup time: 757.329 nanoseconds

middle one lookup time: 1810.82 nanoseconds

back one lookup time: 1311.19 nanoseconds

total retrain: 5.6 (loc & time cost recoeded)

50%

Bulkload time: 5.95944e+09

Total lookup time: 2.27016e+10 nanoseconds

front one lookup time: 800.323 nanoseconds

middle one lookup time: 2012.46 nanoseconds

back one lookup time: 1614.62 nanoseconds

total retrain: 5.14 (loc & time cost recoeded)

40

Bulkload time: 7.28984e+09

Total lookup time: 2.2262e+10 nanoseconds

front one lookup time: 760.655 nanoseconds

middle one lookup time: 2130.03 nanoseconds

back one lookup time: 1661.94 nanoseconds

total retrain: 5.38 (loc & time cost recoeded)

30

Bulkload time: 5.87332e+09

Total lookup time: 2.12905e+10 nanoseconds

front one lookup time: 720.939 nanoseconds

middle one lookup time: 2180.17 nanoseconds

back one lookup time: 1724.34 nanoseconds

total retrain: 5.29 (loc & time cost recoeded)

20

Bulkload time: 6.67532e+09

Total lookup time: 1.98399e+10 nanoseconds

front one lookup time: 600.423 nanoseconds

middle one lookup time: 2255.84 nanoseconds

back one lookup time: 1789.2 nanoseconds

total retrain: 5.34 (loc & time cost recoeded)

10

Bulkload time: 6.76121e+09

Total lookup time: 1.8821e+10 nanoseconds

front one lookup time: 604.484 nanoseconds

middle one lookup time: 1696.86 nanoseconds

back one lookup time: 1984.57 nanoseconds

1-3 舊range bulkload 前中

90

Bulkload time: 9.74627e+08

Total lookup time: 3.71412e+09 nanoseconds

front one lookup time: 361.961 nanoseconds

middle one lookup time: 220.701 nanoseconds

back one lookup time: 933.426 nanoseconds

total retrain: 2.76 (loc & time cost recoeded)

80

Bulkload time: 2.62496e+09

Total lookup time: 5.35498e+09 nanoseconds

front one lookup time: 560.036 nanoseconds

middle one lookup time: 200.135 nanoseconds

back one lookup time: 1636.57 nanoseconds

total retrain: 2.94 (loc & time cost recoeded)

70

Bulkload time: 4.63373e+09

Total lookup time: 7.00393e+09 nanoseconds

front one lookup time: 643.576 nanoseconds

middle one lookup time: 233.726 nanoseconds

back one lookup time: 1577.1 nanoseconds

total retrain: 3.06 (loc & time cost recoeded)

60

Bulkload time: 5.71232e+09

Total lookup time: 7.34249e+09 nanoseconds

front one lookup time: 680.726 nanoseconds

middle one lookup time: 174.738 nanoseconds

back one lookup time: 1398.66 nanoseconds

total retrain: 3.38 (loc & time cost recoeded)

50

Bulkload time: 8.73654e+09

Total lookup time: 1.00657e+10 nanoseconds

front one lookup time: 717.723 nanoseconds

middle one lookup time: 234.43 nanoseconds

back one lookup time: 1668.8 nanoseconds

total retrain: 3.22 (loc & time cost recoeded)

40

Bulkload time: 7.40386e+09

Total lookup time: 9.78846e+09 nanoseconds

front one lookup time: 575.911 nanoseconds

middle one lookup time: 228.426 nanoseconds

back one lookup time: 1433.47 nanoseconds

total retrain: 3.49 (loc & time cost recoeded)

30

Bulkload time: 5.15891e+09

Total lookup time: 9.83056e+09 nanoseconds

front one lookup time: 456.955 nanoseconds

middle one lookup time: 211.762 nanoseconds

back one lookup time: 1353.45 nanoseconds

total retrain: 3.46 (loc & time cost recoeded)

20

Bulkload time: 6.3533e+09

Total lookup time: 1.28743e+10 nanoseconds

front one lookup time: 481.451 nanoseconds

middle one lookup time: 259.692 nanoseconds

back one lookup time: 1671.27 nanoseconds

total retrain: 3.67 (loc & time cost recoeded)

10

Bulkload time: 7.19893e+09

Total lookup time: 1.84558e+10 nanoseconds

front one lookup time: 609.219 nanoseconds

middle one lookup time: 383.704 nanoseconds

back one lookup time: 2214.1 nanoseconds

total retrain: 3.5 (loc & time cost recoeded)

* 1. 舊range bulkload前中後分開 (retrain都是0 沒有insert)

90

Bulkload time: 6.63673e+08

Total lookup time: 3.38295e+09 nanoseconds

front one lookup time: 283.751 nanoseconds

middle one lookup time: 215.923 nanoseconds

back one lookup time: 627.917 nanoseconds

80

Bulkload time: 1.50976e+09

Total lookup time: 4.01688e+09 nanoseconds

front one lookup time: 285.679 nanoseconds

middle one lookup time: 240.412 nanoseconds

back one lookup time: 639.739 nanoseconds

70

Bulkload time: 3.24193e+09

Total lookup time: 5.19133e+09 nanoseconds

front one lookup time: 341.754 nanoseconds

middle one lookup time: 304.582 nanoseconds

back one lookup time: 691.281 nanoseconds

60

Bulkload time: 2.82343e+09

Total lookup time: 7.60473e+09 nanoseconds

front one lookup time: 280.961 nanoseconds

middle one lookup time: 604.686 nanoseconds

back one lookup time: 601.57 nanoseconds

50

Bulkload time: 6.66905e+09

Total lookup time: 8.42771e+09 nanoseconds

front one lookup time: 365.282 nanoseconds

middle one lookup time: 666.547 nanoseconds

back one lookup time: 692.353 nanoseconds

40

Bulkload time: 7.93242e+09

Total lookup time: 8.67706e+09 nanoseconds

front one lookup time: 374.576 nanoseconds

middle one lookup time: 713.66 nanoseconds

back one lookup time: 725.096 nanoseconds

30

Bulkload time: 5.17266e+09

Total lookup time: 7.07948e+09 nanoseconds

front one lookup time: 282.373 nanoseconds

middle one lookup time: 639.706 nanoseconds

back one lookup time: 603.787 nanoseconds

20

Bulkload time: 7.02651e+09

Total lookup time: 7.64788e+09 nanoseconds

front one lookup time: 305.717 nanoseconds

middle one lookup time: 724.151 nanoseconds

back one lookup time: 688.152 nanoseconds

10

Bulkload time: 1.20553e+10

Total lookup time: 1.12024e+10 nanoseconds

front one lookup time: 326.554 nanoseconds

middle one lookup time: 1179.94 nanoseconds

back one lookup time: 1176.7 nanoseconds

* 1. 舊range bulkload全部一起

90

Bulkload time: 5.79854e+10

Total lookup time: 4.50703e+10 nanoseconds

front one lookup time: 2552.72 nanoseconds

middle one lookup time: 3272.94 nanoseconds

back one lookup time: 2461.04 nanoseconds

80

Bulkload time: 5.22744e+10

Total lookup time: 4.33489e+10 nanoseconds

front one lookup time: 2482.35 nanoseconds

middle one lookup time: 3230.22 nanoseconds

back one lookup time: 2418.32 nanoseconds

70

Bulkload time: 5.58647e+10

Total lookup time: 4.12787e+10 nanoseconds

front one lookup time: 2493.21 nanoseconds

middle one lookup time: 3118.27 nanoseconds

back one lookup time: 2471.07 nanoseconds

60

Bulkload time: 4.66756e+10

Total lookup time: 3.98397e+10 nanoseconds

front one lookup time: 2527.97 nanoseconds

middle one lookup time: 3029.7 nanoseconds

back one lookup time: 2509.81 nanoseconds

50

Bulkload time: 6.0867e+10

Total lookup time: 4.42018e+10 nanoseconds

front one lookup time: 3011.12 nanoseconds

middle one lookup time: 3250.75 nanoseconds

back one lookup time: 3026.31 nanoseconds

40

Bulkload time: 4.78431e+10

Total lookup time: 3.48565e+10 nanoseconds

front one lookup time: 2467.72 nanoseconds

middle one lookup time: 2591.83 nanoseconds

back one lookup time: 2316.44 nanoseconds

30

Bulkload time: 4.16677e+10

Total lookup time: 3.04984e+10 nanoseconds

front one lookup time: 2077.15 nanoseconds

middle one lookup time: 2143.18 nanoseconds

back one lookup time: 2265.57 nanoseconds

20

Bulkload time: 5.17708e+10

Total lookup time: 3.28304e+10 nanoseconds

front one lookup time: 2450.76 nanoseconds

middle one lookup time: 2214.43 nanoseconds

back one lookup time: 2262.74 nanoseconds

10

Bulkload time: 5.16921e+10

Total lookup time: 3.89363e+10 nanoseconds

front one lookup time: 2825.09 nanoseconds

middle one lookup time: 2421.02 nanoseconds

back one lookup time: 2773.15 nanoseconds

2-1 新range bulkload前

Bulkload time: 9.97267e+08

Total lookup time: 3.53472e+10 nanoseconds

front one lookup time: 1018.13 nanoseconds

middle one lookup time: 2641.76 nanoseconds

back one lookup time: 1565.73 nanoseconds

total retrain: 929.54 (loc & time cost recoeded)

80

Bulkload time: 2.13725e+09

Total lookup time: 3.03507e+10 nanoseconds

front one lookup time: 759.212 nanoseconds

middle one lookup time: 2409.74 nanoseconds

back one lookup time: 1487.18 nanoseconds

total retrain: 974.54 (loc & time cost recoeded)

70

Bulkload time: 4.45218e+09

Total lookup time: 2.61069e+10 nanoseconds

front one lookup time: 733.339 nanoseconds

middle one lookup time: 2175.45 nanoseconds

back one lookup time: 1457.69 nanoseconds

total retrain: 995.03 (loc & time cost recoeded)

60

Bulkload time: 4.02731e+09

Total lookup time: 2.88253e+10 nanoseconds

front one lookup time: 925.255 nanoseconds

middle one lookup time: 2589.8 nanoseconds

back one lookup time: 1526.6 nanoseconds

total retrain: 1004.66 (loc & time cost recoeded)

50

Bulkload time: 7.22385e+09

Total lookup time: 2.25595e+10 nanoseconds

front one lookup time: 968.054 nanoseconds

middle one lookup time: 2052.64 nanoseconds

back one lookup time: 1326.24 nanoseconds

total retrain: 998.35 (loc & time cost recoeded)

40

Bulkload time: 7.63614e+09

Total lookup time: 2.39534e+10 nanoseconds

front one lookup time: 934.404 nanoseconds

middle one lookup time: 2372.06 nanoseconds

back one lookup time: 1565.34 nanoseconds

total retrain: 978.97 (loc & time cost recoeded)

30

Bulkload time: 6.11551e+09

Total lookup time: 2.19067e+10 nanoseconds

front one lookup time: 789.19 nanoseconds

middle one lookup time: 2463.83 nanoseconds

back one lookup time: 1537.8 nanoseconds

total retrain: 957.57 (loc & time cost recoeded)

20

Bulkload time: 7.16229e+09

Total lookup time: 2.15995e+10 nanoseconds

front one lookup time: 812.968 nanoseconds

middle one lookup time: 2460.55 nanoseconds

back one lookup time: 1786.27 nanoseconds

total retrain: 943.74 (loc & time cost recoeded)

10

Bulkload time: 8.06866e+09

Total lookup time: 1.77091e+10 nanoseconds

front one lookup time: 749.985 nanoseconds

middle one lookup time: 1939.78 nanoseconds

back one lookup time: 1609.85 nanoseconds

total retrain: 862.25 (loc & time cost recoeded)

2-1 新range bulkload前中分開

90

Bulkload time: 7.45978e+08

Total lookup time: 3.04198e+09 nanoseconds

front one lookup time: 389.103 nanoseconds

middle one lookup time: 162.268 nanoseconds

back one lookup time: 1004.73 nanoseconds

total retrain: 3.06 (loc & time cost recoeded)

80

Bulkload time: 1.63081e+09

Total lookup time: 4.16728e+09 nanoseconds

front one lookup time: 426.759 nanoseconds

middle one lookup time: 176.301 nanoseconds

back one lookup time: 1118.21 nanoseconds

total retrain: 3.25 (loc & time cost recoeded)

70

Bulkload time: 3.48397e+09

Total lookup time: 6.91441e+09 nanoseconds

front one lookup time: 558.968 nanoseconds

middle one lookup time: 269.893 nanoseconds

back one lookup time: 1450.6 nanoseconds

total retrain: 3.62 (loc & time cost recoeded)

60

Bulkload time: 3.58846e+09

Total lookup time: 6.68425e+09 nanoseconds

front one lookup time: 522.535 nanoseconds

middle one lookup time: 183.389 nanoseconds

back one lookup time: 1297.49 nanoseconds

total retrain: 3.63 (loc & time cost recoeded)

50

Bulkload time: 6.19458e+09

Total lookup time: 8.37709e+09 nanoseconds

front one lookup time: 653.108 nanoseconds

middle one lookup time: 210.239 nanoseconds

back one lookup time: 1302.78 nanoseconds

total retrain: 3.86 (loc & time cost recoeded)

40

Bulkload time: 6.84027e+09

Total lookup time: 1.07509e+10 nanoseconds

front one lookup time: 700.163 nanoseconds

middle one lookup time: 253.676 nanoseconds

back one lookup time: 1503.06 nanoseconds

total retrain: 4.66 (loc & time cost recoeded)

30

Bulkload time: 5.89924e+09

Total lookup time: 1.21504e+10 nanoseconds

front one lookup time: 662.656 nanoseconds

middle one lookup time: 287.695 nanoseconds

back one lookup time: 1552.71 nanoseconds

total retrain: 4.33 (loc & time cost recoeded)

20

Bulkload time: 6.98164e+09

Total lookup time: 1.21569e+10 nanoseconds

front one lookup time: 599.369 nanoseconds

middle one lookup time: 230.093 nanoseconds

back one lookup time: 1440.96 nanoseconds

total retrain: 4.63 (loc & time cost recoeded)

10

Bulkload time: 7.12934e+09

Total lookup time: 1.31922e+10 nanoseconds

front one lookup time: 584.019 nanoseconds

middle one lookup time: 193.063 nanoseconds

back one lookup time: 1452.13 nanoseconds

total retrain: 4.83 (loc & time cost recoeded)

2-3 bulkload 前中後分開

90

Bulkload time: 7.02284e+08

Total lookup time: 8.51539e+09 nanoseconds

front one lookup time: 319.157 nanoseconds

middle one lookup time: 613.9 nanoseconds

back one lookup time: 708.655 nanoseconds

80

Bulkload time: 1.52174e+09

Total lookup time: 9.39459e+09 nanoseconds

front one lookup time: 320.737 nanoseconds

middle one lookup time: 706.359 nanoseconds

back one lookup time: 690.914 nanoseconds

70

Bulkload time: 3.19379e+09

Total lookup time: 9.44996e+09 nanoseconds

front one lookup time: 374.513 nanoseconds

middle one lookup time: 720.316 nanoseconds

back one lookup time: 731.868 nanoseconds

60

Bulkload time: 2.85326e+09

Total lookup time: 7.45328e+09 nanoseconds

front one lookup time: 259.667 nanoseconds

middle one lookup time: 604.676 nanoseconds

back one lookup time: 569.188 nanoseconds

50

Bulkload time: 5.45628e+09

Total lookup time: 7.84751e+09 nanoseconds

front one lookup time: 321.816 nanoseconds

middle one lookup time: 627.422 nanoseconds

back one lookup time: 649.481 nanoseconds

40

Bulkload time: 6.4761e+09

Total lookup time: 7.9796e+09 nanoseconds

front one lookup time: 326.85 nanoseconds

middle one lookup time: 665.564 nanoseconds

back one lookup time: 672.074 nanoseconds

30

Bulkload time: 4.85935e+09

Total lookup time: 6.73988e+09 nanoseconds

front one lookup time: 260.777 nanoseconds

middle one lookup time: 579.478 nanoseconds

back one lookup time: 608.194 nanoseconds

20

Bulkload time: 5.52873e+09

Total lookup time: 6.58398e+09 nanoseconds

front one lookup time: 268.373 nanoseconds

middle one lookup time: 619.19 nanoseconds

back one lookup time: 589.35 nanoseconds

10

Bulkload time: 6.21134e+09

Total lookup time: 6.37285e+09 nanoseconds

front one lookup time: 263.056 nanoseconds

middle one lookup time: 633.636 nanoseconds

back one lookup time: 600.478 nanoseconds

2-4 bulkload中

90

Bulkload time: 1.79585e+10

Total lookup time: 9.24535e+09 nanoseconds

front one lookup time: 1574.94 nanoseconds

middle one lookup time: 565.527 nanoseconds

back one lookup time: 1358.95 nanoseconds

total retrain: 15.8 (loc & time cost recoeded)

80

Bulkload time: 1.63257e+10

Total lookup time: 9.82283e+09 nanoseconds

front one lookup time: 1553.51 nanoseconds

middle one lookup time: 525.126 nanoseconds

back one lookup time: 1211.71 nanoseconds

total retrain: 17.43 (loc & time cost recoeded)

70

Bulkload time: 2.20139e+10

Total lookup time: 1.19592e+10 nanoseconds

front one lookup time: 1356.53 nanoseconds

middle one lookup time: 668.197 nanoseconds

back one lookup time: 1179.42 nanoseconds

total retrain: 6.97 (loc & time cost recoeded)

60

Bulkload time: 1.46591e+10

Total lookup time: 1.53206e+10 nanoseconds

front one lookup time: 1740.57 nanoseconds

middle one lookup time: 726.153 nanoseconds

back one lookup time: 1513.56 nanoseconds

total retrain: 17.82 (loc & time cost recoeded)

50

Bulkload time: 1.2353e+10

Total lookup time: 1.70355e+10 nanoseconds

front one lookup time: 1733.57 nanoseconds

middle one lookup time: 777.802 nanoseconds

back one lookup time: 1543.36 nanoseconds

total retrain: 18.38 (loc & time cost recoeded)

40

Bulkload time: 5.80949e+09

Total lookup time: 1.76429e+10 nanoseconds

front one lookup time: 1715.43 nanoseconds

middle one lookup time: 686.722 nanoseconds

back one lookup time: 1539.65 nanoseconds

total retrain: 19.25 (loc & time cost recoeded)

30

Bulkload time: 6.57985e+09

Total lookup time: 2.11711e+10 nanoseconds

front one lookup time: 1924.47 nanoseconds

middle one lookup time: 796.092 nanoseconds

back one lookup time: 1682.95 nanoseconds

total retrain: 18.89 (loc & time cost recoeded)

20

Bulkload time: 3.02978e+09

Total lookup time: 2.42711e+10 nanoseconds

front one lookup time: 2237.61 nanoseconds

middle one lookup time: 728.253 nanoseconds

back one lookup time: 1701.45 nanoseconds

total retrain: 19.52 (loc & time cost recoeded)

10

Bulkload time: 1.54245e+09

Total lookup time: 2.78972e+10 nanoseconds

front one lookup time: 2263.26 nanoseconds

middle one lookup time: 638.796 nanoseconds

back one lookup time: 1991.31 nanoseconds

total retrain: 20.03 (loc & time cost recoeded)

2-5 新bulkload全部

90

Bulkload time: 4.24517e+10

Total lookup time: 4.19883e+10 nanoseconds

front one lookup time: 2601.34 nanoseconds

middle one lookup time: 3010.41 nanoseconds

back one lookup time: 2766.36 nanoseconds

80

Bulkload time: 4.35282e+10

Total lookup time: 4.36978e+10 nanoseconds

front one lookup time: 2882.27 nanoseconds

middle one lookup time: 3153.8 nanoseconds

back one lookup time: 2877.25 nanoseconds

70

Bulkload time: 5.19222e+10

Total lookup time: 4.65327e+10 nanoseconds

front one lookup time: 2900.96 nanoseconds

middle one lookup time: 3422.98 nanoseconds

back one lookup time: 3125.41 nanoseconds

60

Bulkload time: 5.27473e+10

Total lookup time: 4.54359e+10 nanoseconds

front one lookup time: 3181.92 nanoseconds

middle one lookup time: 3294.52 nanoseconds

back one lookup time: 3045.79 nanoseconds

50

Bulkload time: 5.18521e+10

Total lookup time: 4.38114e+10 nanoseconds

front one lookup time: 3195.64 nanoseconds

middle one lookup time: 3048.64 nanoseconds

back one lookup time: 3135.27 nanoseconds

40

Bulkload time: 5.03218e+10

Total lookup time: 3.8462e+10 nanoseconds

front one lookup time: 2779.45 nanoseconds

middle one lookup time: 2514.8 nanoseconds

back one lookup time: 2959.74 nanoseconds

30

Bulkload time: 6.37814e+10

Total lookup time: 4.5852e+10 nanoseconds

front one lookup time: 3339.34 nanoseconds

middle one lookup time: 2765.09 nanoseconds

back one lookup time: 3581.35 nanoseconds

20

Bulkload time: 6.06014e+10

Total lookup time: 4.44858e+10 nanoseconds

front one lookup time: 3400.51 nanoseconds

middle one lookup time: 2509.74 nanoseconds

back one lookup time: 3231.81 nanoseconds

10

Bulkload time: 5.63488e+10

Total lookup time: 4.22886e+10 nanoseconds

front one lookup time: 3194.55 nanoseconds

middle one lookup time: 2067.2 nanoseconds

back one lookup time: 3010.64 nanoseconds

怎麼分前中後(或更多)的切割點

kmean : 限制每群的大小: 給k區域，每區不超過某大小

做kmean(做一半就好 沒分到就不強迫當離群值處理) 的時候找可能離群值，另外管理

離群值: 可自成一個群只是離大家很遠 vs 不行

不行的拿去另一個資料結構(hash或另一個ALEX)

創造小dataset eg 10萬 random 1-100萬內

1. K=3硬切 嘗試計時 每區不要超過50%

找5% 離中心點最遠的 就是離群值

1. 暴力解: 硬切三塊
2. **一次全部**

現有的前中後

1. 80% 暴力解應該做的不好　也做kmean
2. 30/40%的暴力解 也做kmean

在bulkload之前要 站存作分析 vs point insert

retrain成本

少數insert影響整個model的效能