Results for R1 instances (VRPSPD) Keld Helsgaun, November 19, 2017

| Instance | BKS | LKH-3 | Gap (%) |
|----------|--------|--------|---------|
| 20 2 01 | 463.05 | 463.39 | 0.07 |
| 20 2 02 | 242.45 | 242.45 | 0.00 |
| 20 2 03 | 447.28 | 447.28 | 0.00 |
| 20 2 04 | 397.74 | 397.74 | 0.00 |
| 20 2 05 | 400.01 | 401.06 | 0.26 |
| 20 2 06 | 277.31 | 277.31 | 0.00 |
| 20 2 07 | 356.18 | 356.98 | 0.22 |
| 20 2 08 | 414.44 | 415.08 | 0.15 |
| 20 2 09 | 375.54 | 375.54 | 0.00 |
| 20 2 10 | 479.07 | 479.07 | 0.00 |
| 20 3 01 | 384.55 | 386.36 | 0.47 |
| 20 3 02 | 566.26 | 572.57 | 1.11 |
| 20 3 03 | 400.65 | 402.23 | 0.39 |
| 20 3 04 | 422.98 | 431.79 | 2.08 |
| 20 3 05 | 424.77 | 431.71 | 1.63 |
| 20 3 06 | 518.50 | 518.63 | 0.03 |
| 20 3 07 | 328.57 | 336.51 | 2.42 |
| 20 3 08 | 436.13 | 445.34 | 2.11 |
| 20 3 09 | 455.55 | 457.36 | 0.40 |
| 20 3 10 | 566.50 | 579.58 | 2.31 |
| 30 2 01 | 477.83 | 478.43 | 0.13 |
| 30 2 02 | 444.62 | 447.26 | 0.59 |
| 30 2 03 | 504.36 | 506.32 | 0.39 |
| 30 2 04 | 487.40 | 487.40 | 0.00 |
| 30 2 05 | 445.74 | 450.19 | 1.00 |
| 30_2_06 | 487.62 | 489.52 | 0.39 |
| 30 2 07 | 530.92 | 531.86 | 0.18 |
| 30 2 08 | 383.59 | 384.27 | 0.18 |
| 30_2_09 | 432.26 | 433.79 | 0.35 |
| 30_2_10 | 443.89 | 444.39 | 0.11 |
| 30_3_01 | 571.93 | 575.44 | 0.61 |
| 30_3_02 | 563.58 | 565.30 | 0.31 |
| 30 3 03 | 590.81 | 594.72 | 0.66 |
| 30_3_04 | 594.23 | 596.17 | 0.33 |
| 30_3_05 | 460.37 | 461.22 | 0.18 |
| 30_3_06 | 592.52 | 593.18 | 0.11 |
| 30_3_07 | 475.01 | 476.74 | 0.36 |
| 30_3_08 | 489.39 | 491.83 | 0.50 |
| 30_3_09 | 471.64 | 477.39 | 1.22 |
| 30_3_10 | 542.82 | 544.28 | 0.27 |
| 40_4_01 | 599.62 | 599.70 | 0.01 |
| 40_4_02 | 725.21 | 726.10 | 0.12 |

| 40_4_03 | 546.14 | 549.06 | 0.53 |
|-------------------------------|----------------------------|------------------|--------------|
| 40_4_04 | 757.00 | 767.22 | 1.35 |
| 40_4_05 | 723.29 | 725.75 | 0.34 |
| 40_4_06 | 675.30 | 682.84 | 1.12 |
| 40_4_07 | 571.73 | 554.74 | -2.97 |
| 40_4_08 | 595.36 | 595.75 | 0.07 |
| 40_4_09 | 465.89 | 465.89 | 0.00 |
| 40_4_10 | 526.13 | 530.08 | 0.75 |
| 40_5_01 | 601.70 | 606.10 | 0.73 |
| 40_5_02 | 641.76 | 649.31 | 1.18 |
| 40_5_03 | 597.22 | 604.49 | 1.22 |
| 40_5_04 | 693.94 | 700.89 | 1.00 |
| 40_5_05 | 644.23 | 648.23 | 0.62 |
| 40_5_06 | 615.24 | 619.37 | 0.67 |
| 40 5 07 | 628.52 | 645.04 | 2.63 |
| 40_5_08 | 693.23 | 696.70 | 0.50 |
| 40 5 09 | 918.35 | 936.00 | 1.92 |
| 40 5 10 | 679.94 | 692.14 | 1.79 |
| 50 4 01 | 581.29 | 582.24 | 0.16 |
| 50 4 02 | 563.18 | 565.64 | 0.44 |
| 50 4 03 | 609.00 | 609.96 | 0.16 |
| 50 4 04 | 532.78 | 533.46 | 0.13 |
| 50 4 05 | 635.10 | 641.99 | 1.08 |
| 50 4 06 | 576.96 | 578.91 | 0.34 |
| 50 4 07 | 600.42 | 608.36 | 1.32 |
| 50 4 08 | 596.69 | 605.69 | 1.51 |
| 50 4 09 | 603.97 | 614.08 | 1.67 |
| 50 4 10 | 661.80 | 665.20 | 0.51 |
| 50 5 01 | 787.42 | 797.47 | 1.28 |
| 50 5 02 | 737.43 | 743.12 | 0.77 |
| 50 5 03 | 653.81 | 658.97 | 0.79 |
| 50 5 04 | 764.65 | 769.93 | 0.69 |
| 50 5 05 | 658.98 | 668.48 | 1.44 |
| 50 5 06 | 739.91 | 746.10 | 0.84 |
| 50 5 07 | 691.01 | 695.10 | 0.59 |
| 50 5 08 | 675.89 | 679.64 | 0.55 |
| 50 5 09 | 625.24 | 630.99 | 0.92 |
| 50 5 10 | 791.16 | 797.72 | 0.92 |
| 60 5 01 | 685.60 | 692.51 | 1.01 |
| 60 5 02 | 569.77 | 573.62 | 0.68 |
| 60 5 03 | 670.02 | 681.36 | 1.69 |
| 60 5 04 | 725.69 | 729.73 | 0.56 |
| | 698.85 | 708.15 | |
| | | 630.45 | 1.33 0.41 |
| 60 5 06 | | | |
| 60_5_06 | 627.89 | | |
| 60_5_06 60_5_07 60_5_08 | 627.89 651.62 502.06 | 665.01 504.24 | 2.05 |

| 60_5_09 | 666.91 | 670.02 | 0.47 |
|---------|--------|--------|------|
| 60_5_10 | 744.69 | 750.57 | 0.79 |
| 60_6_01 | 703.49 | 704.13 | 0.09 |
| 60_6_02 | 836.22 | 847.19 | 1.31 |
| 60_6_03 | 829.71 | 847.58 | 2.15 |
| 60_6_04 | 777.86 | 783.55 | 0.73 |
| 60_6_05 | 775.00 | 777.58 | 0.33 |
| 60_6_06 | 756.04 | 764.31 | 1.09 |
| 60_6_07 | 740.27 | 747.59 | 0.99 |
| 60_6_08 | 680.60 | 682.14 | 0.23 |
| 60_6_09 | 763.40 | 774.30 | 1.43 |
| 60_6_10 | 660.42 | 666.69 | 0.95 |