| TTA | **KR580S2** | TPCx-AI | 1.0.1 |
| --- | --- | --- | --- |
| | | TPC Pricing | 2.8.0 |
| | | Report Date | Apr. 18, 2022 |

| TPCx-AI Performance | Total System Cost | Price/Performance | Availability Date |
| --- | --- | --- | --- |
| **1,205.43 AIUCpm@1000** | **₩456,752,000 KRW** | **₩378,912.09 KRW/AIUCpm@1000** | **April 18, 2022** |

| Framework | Operating System | Other Software | Scale Factor | Streams |
| --- | --- | --- | --- | --- |
| CDP Private Cloud Base Edition Business Version 7.1 | Red Hat Enterprise Linux Server 7.8 & 7.9 | N/A | 1,000 | 10 |

## Use Case Time (sec.) by Phase

Legend: Training, Serving 1, Serving 2, Throughput (Avg)
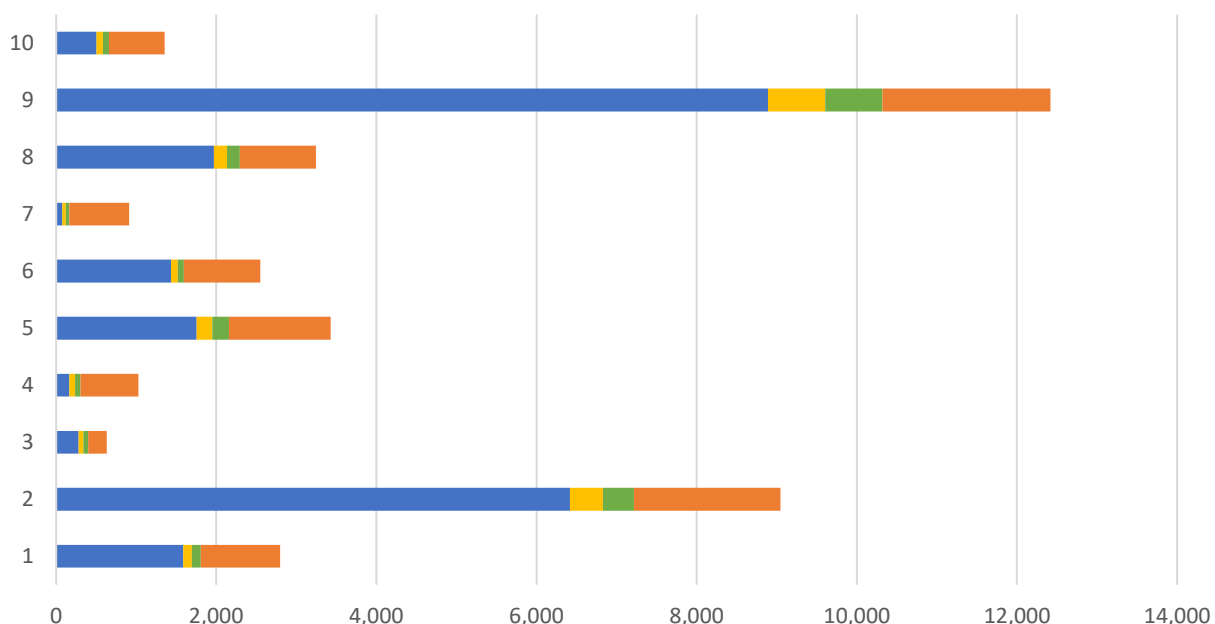


| Physical Storage / Scale Factor | Scale Factor / Physical Memory | Main Data Redundancy Model |
| --- | --- | --- |
| 135.68 | 0.16 | HDFS Replication Factor 3 |

| Servers: Total Processors/Cores/Threads | 3 6 / 240 / 480 | |
| --- | --- | --- |
| Server Type | 1x KR580S2 (Master/Worker) | 2x KR580S2 (Master/Worker) |
| Processors | 2x Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz GHz | 2x Intel(R) Xeon(R) Platinum 8380 CPU @ 2.30GHz GHz |
| Memory | 2,048 GiB | 2,048 GiB |
| Storage Controller | 1x RAID Controller | 1x RAID Controller |
| Storage Device | 8x 3.84 TB SATA SSD; 2x 3.2 TB NVMe SSD | 12x 3.84 TB SATA SSD; 1x 3.2 TB NVMe SSD |
| Network Controller | 1x 10GbE 2-port | 1x 10GbE 2-port |
| Connectivity | 1x ubiQuoss E6200 10GbE (Switch) | |

| | | TPCx-AI | 1.0.1 |
| --- | --- | --- | --- |
| **KR580S2** | | TPC Pricing | 2.8.0 |
| | | Report Date | Apr. 18, 2022 |

| Description | Part Number | Source | List Price | Qty | Extended Price | 1-Yr. Maintenance |
| --- | --- | --- | --- | --- | --- | --- |
| **Server Hardware** | | | | | | |
| Server01 | KR580S2 | 1 | 79,670,000 | 1 | 79,670,000 | |
| 2U-12bay, FH Riser(3slots PCIe Gen4.0 x16, x8, x8) x2, 1300W x2, Rail | - | 1 | (include) | 1 | | |
| 3rd Gen Intel Xeon Scalable Processor Platinum 8380 (40C/80T 2.3GHz, 60MB, 270W) | CD8068904572601 | 1 | (include) | 2 | | |
| 64GB DDR4 3200 ECC LRDIMM Memory | M386A8K40BM2-CTD | 1 | (include) | 32 | | |
| Micron 5300PRO SATA SSD 3.84TB | MTFDDAK3T8TDS-1AW1ZABYY | 1 | (include) | 8 | | |
| 삼성 PM1735 HH-HL NVMe SSD 3.2TB | MZPLL3T2HMLS | 1 | (include) | 2 | | |
| LSI MegaRAID SAS-3 3108 | AOC-S3108L-H8IR-LOW P | 1 | (include) | 1 | | |
| Intel Corporation Ethernet Controller X710 for 10GbE SFP+ | X710DA2 | 1 | (include) | 1 | | |
| Maintenance - 7x24x4 Care Pack (1-yrs) | - | 1 | 2,000,000 | 1 | | 2,000,000 |
| Server02, Server03 | KR580S2 | 1 | 83,800,000 | 2 | 167,600,000 | |
| 2U-12bay, FH Riser(3slots PCIe Gen4.0 x16, x8, x8) x2, 1300W x2, Rail | - | 1 | (include) | 2 | | |
| 3rd Gen Intel Xeon Scalable Processor Platinum 8380 (40C/80T 2.3GHz, 60MB, 270W) | CD8068904572601 | 1 | (include) | 4 | | |
| 64GB DDR4 3200 ECC LRDIMM Memory | M386A8K40BM2-CTD | 1 | (include) | 64 | | |
| Micron 5300PRO SATA SSD 3.84TB | MTFDDAK3T8TDS-1AW1ZABYY | 1 | (include) | 24 | | |
| 삼성 PM1735 HH-HL NVMe SSD 3.2TB | MZPLL3T2HMLS | 1 | (include) | 2 | | |
| LSI MegaRAID SAS-3 3108 | AOC-S3108L-H8IR-LOW P | 1 | (include) | 2 | | |
| Intel Corporation Ethernet Controller X710 for 10GbE SFP+ | X710DA2 | 1 | (include) | 2 | | |
| Maintenance - 7x24x4 Care Pack (1-yrs) | - | 1 | 2,000,000 | 2 | | 4,000,000 |
| | | | Sub-Total | | 247,270,000 | 6,000,000 |
| | | | | | | |
| **Network** | | | | | | |
| ubiQuoss E6200 | MSN2700-CS2F | 2 | 20,000,000 | 1 | 20,000,000 | |
| Maintenance - 7x24x4 Care Pack (1-yrs) | - | 2 | (include) | 1 | | |
| | | | Sub-Total | | 20,000,000 | 0 |
| | | | | | | |
| **Software** | | | | | | |
| Red Hat Enterprise Linux Server7.8, 7.9 | RH00004 | 3 | 1,603,000 | 3 | 4,809,000 | |
| Maintenance - 7x24x4 Care Pack (1-yrs) | RP-CPS(OS) | 3 | 2,000,000 | 3 | | 6,000,000 |
| CDP Private Cloud Base Edition - Business Version 7.1 | CDP-PVC-BASE-BUS | 4 | 13,020,000 | 3 | 39,060,000 | |
| Clouedra Data Platform Compute | COMPUTE | 4 | 130,200 | 720 | 93,744,000 | |
| Clouera Certified Technical Partner Services(1y 7x24x4 Technical Support) | - | 4 | 35,000,000 | 1 | | 35,000,000 |
| | | | Sub-Total | | 137,613,000 | 41,000,000 |
| | | | | | | |
| **Discount** | | | | | | |
| Red Hat Enterprise Linux Server7.8, 7.9 | RH00004 | 3 | 623,000 | 3 | 1,869,000 | |
| Maintenance - 7x24x4 Care Pack (1-yrs) | RP-CPS(OS) | 3 | 1,000,000 | 3 | | 3,000,000 |
| | | | Sub-Total | | 1,869,000 | 3,000,000 |
| | | | | | | |
| | | | Total | | 406,752,000 | 50,000,000 |

Pricing: 1 = KTNF Co., Ltd.; 2 = Digital Seouloa Co., Ltd.; 3 = Rockplace Inc.; 4 = Pngtech Co., Ltd.

\* Discount applies to all line items where Key = 1. Discount based upon total system cost as purchased by a regular customer.

**Audited by Doug Johnson, InfoSizing**

**Total System Cost (KRW):** **₩456,752,000**

**AIUCpm@1000:** **1,205.43**

**₩/AIUCpm@1000:** **₩378,912.09**

*Prices used in TPC benchmarks reflect the actual prices a customer would pay for a one-time purchase of the stated Line Items. Individually negotiated discounts are not permitted. Special prices based on assumptions about past or future purchases are not permitted. All discounts reflect standard pricing policies for the listed Line Items. For complete details, see the pricing section of the TPC Benchmark Standard. If you find that the stated prices are not available according to these terms, please inform the TPC at pricing@tpc.org. Thank you.*

| | **KR580S2** | TPCx-AI | 1.0.1 |
|---|---|---|---|
| | | TPC Pricing | 2.8.0 |
| | | Report Date | Apr. 18, 2022 |

*Numerical Quantities*

| | | | |
|---|---|---|---|
| **AIUCpm@1000** | **1,205.43** | $T_{Load}$ | 4,405.47 |
| Scale Factor | 1,000 | $T_{LD}$ | 4,405.47 |
| Streams | 10 | $T_{PTT}$ | 981.90 |
| | | $T_{PST1}$ | 128.21 |
| Kit Version | 1.0.1 | $T_{PST2}$ | 126.91 |
| Execution Status | Pass | $T_{PST}$ | 128.21 |
| Accuracy Status | Pass | $T_{TT}$ | 110.67 |

### Test Times

| | |
|---|---|
| Overall Run Start Time | 2022-03-15 12:37:47.702 |
| Overall Run End Time | 2022-03-16 04:33:59.871 |
| Overall Run Elapsed Time | 57,372.169 |
| | |
| Load Test Start Time | 2022-03-15 16:23:30.020 |
| Load Test End Time | 2022-03-15 17:36:58.837 |
| Load Test Elapsed Time | 4,408.817 |
| | |
| Power Training Start Time | 2022-03-15 17:36:58.842 |
| Power Training End Time | 2022-03-16 00:01:59.401 |
| Power Training Elapsed Time | 23,100.559 |
| | |
| Power Serving 1 Start Time | 2022-03-16 00:01:59.410 |
| Power Serving 1 End Time | 2022-03-16 00:34:36.714 |
| Power Serving 1 Elapsed Time | 1,957.304 |
| | |
| Power Serving 2 Start Time | 2022-03-16 00:34:36.726 |
| Power Serving 2 End Time | 2022-03-16 01:07:01.643 |
| Power Serving 2 Elapsed Time | 1,944.917 |
| | |
| Scoring Start Time | 2022-03-16 01:13:56.743 |
| Scoring End Time | 2022-03-16 01:29:15.745 |
| Scoring Elapsed Time | 919.002 |
| | |
| Throughput Start Time | 2022-03-16 01:29:15.776 |
| Throughput End Time | 2022-03-16 04:33:59.869 |
| Throughput Elapsed Time | 11,084.093 |

| | | |
|---|---|---|
| **TTA** (logo) | # KR580S2 | TPCx-AI 1.0.1 |
| | | TPC Pricing 2.8.0 |
| | | Report Date   Apr. 18, 2022 |

*Numerical Quantities (continued)*

Use Case Times & Accuracy

| Use Case | Training (sec) | Serving 1 (sec) | Serving 2 (sec) | Throughput (avg) | Accuracy |
|---|---|---|---|---|---|
| UC01 | 1,585.134 | 110.808 | 109.241 | 993.401 | 0.000 |
| UC02 | 6,416.105 | 412.045 | 389.851 | 1,829.666 | 0.234 |
| UC03 | 282.508 | 56.355 | 61.678 | 230.471 | 4.597 |
| UC04 | 165.502 | 71.193 | 68.850 | 721.433 | 0.712 |
| UC05 | 1,754.154 | 198.239 | 206.950 | 1,271.419 | 0.409 |
| UC06 | 1,435.558 | 83.672 | 77.323 | 954.890 | 0.213 |
| UC07 | 78.657 | 41.837 | 42.426 | 749.092 | 1.504 |
| UC08 | 1,969.860 | 166.086 | 159.641 | 948.366 | 0.749 |
| UC09 | 8,891.611 | 712.202 | 717.599 | 2,096.334 | 1.000 |
| UC10 | 504.945 | 79.827 | 77.039 | 695.468 | 0.817 |

## Use Case Serving Times (sec.)

Legend: Serving 1, Serving 2, Throughput (Avg)