

**"TO23-H60" Qualification Vender List**

**Please contact FAE support for below orange blocks**

| Intel CPU                             |           |        |          |       |            |            |                          |                     |        |              |
|---------------------------------------|-----------|--------|----------|-------|------------|------------|--------------------------|---------------------|--------|--------------|
| Product Name                          | Code Name | Q-Spec | Stepping | Cache | System Bus | # of Cores | Processor Base Frequency | Max Turbo Frequency | TDP(W) | Memory Types |
| Intel® Xeon® Processor Platinum 8380  | Icelake   | QXC0   | D1       | 60MB  | 11.2GT/s   | 40         | 2.30 GHz                 | 3.40 GHz            | 270 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8368  | Icelake   | QWLL   | D1       | 57MB  | 11.2GT/s   | 38         | 2.40 GHz                 | 3.40 GHz            | 270 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8362  | Icelake   | QXTL   | D2       | 48MB  | 11.2GT/s   | 32         | 2.80 GHz                 | 3.60 GHz            | 265 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8360Y | Icelake   | QXBZ   | D1       | 54MB  | 11.2GT/s   | 36         | 2.40 GHz                 | 3.50 GHz            | 250 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8358P | Icelake   | QXCM   | D1       | 48MB  | 11.2GT/s   | 32         | 2.60 GHz                 | 3.40 GHz            | 240 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8352Y | Icelake   | QWM3   | D1       | 48MB  | 11.2GT/s   | 32         | 2.20 GHz                 | 3.40 GHz            | 205 W  | DDR4-3200    |
| Intel® Xeon® Processor Platinum 8352V | Icelake   | SRK32  | D2       | 54MB  | 11.2GT/s   | 36         | 2.10 GHz                 | 3.50 GHz            | 195 W  | DDR4-2933    |
| Intel® Xeon® Processor Platinum 8352M | Icelake   | QXZ0   | D2       | 48MB  | 11.2GT/s   | 32         | 2.30 GHz                 | 3.50 GHz            | 185W   | DDR4-3200    |
| Intel® Xeon® Processor Gold 6346      | Icelake   | QWMD   | D1       | 36MB  | 11.2GT/s   | 16         | 3.10 GHz                 | 3.60 GHz            | 205 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6342      | Icelake   | QXRU   | M1       | 36MB  | 11.2GT/s   | 24         | 2.80 GHz                 | 3.50 GHz            | 230 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6338T     | Icelake   | QXS3   | M1       | 36MB  | 11.2GT/s   | 24         | 2.10 GHz                 | 3.40 GHz            | 165 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6338N     | Icelake   | QWM6   | D1       | 48MB  | 11.2GT/s   | 32         | 2.20 GHz                 | 3.50 GHz            | 185 W  | DDR4-2667    |
| Intel® Xeon® Processor Gold 6338      | Icelake   | SRKJ9  | D2       | 48MB  | 11.2GT/s   | 32         | 2.00 GHz                 | 3.20 GHz            | 205 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6336Y     | Icelake   | QXRV   | M1       | 36MB  | 11.2GT/s   | 24         | 2.40 GHz                 | 3.60 GHz            | 185 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6334      | Icelake   | QXRQ   | M1       | 18MB  | 11.2GT/s   | 8          | 3.60 GHz                 | 3.70 GHz            | 165 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 6330N     | Icelake   | QWLP   | D1       | 42MB  | 11.2GT/s   | 28         | 2.20 GHz                 | 3.40 GHz            | 165 W  | DDR4-2667    |
| Intel® Xeon® Processor Gold 6330      | Icelake   | QWMC   | D1       | 42MB  | 11.2GT/s   | 28         | 2.00 GHz                 | 3.10 GHz            | 205 W  | DDR4-2933    |
| Intel® Xeon® Processor Gold 6326      | Icelake   | QXS7   | M1       | 24MB  | 11.2GT/s   | 16         | 2.90 GHz                 | 3.50 GHz            | 185 W  | DDR4-3200    |
| Intel® Xeon® Processor Gold 5320T     | Icelake   | QXS6   | M1       | 30MB  | 11.2GT/s   | 20         | 2.30 GHz                 | 3.50 GHz            | 150 W  | DDR4-2993    |
| Intel® Xeon® Processor Gold 5320      | Icelake   | QXRT   | M1       | 39MB  | 11.2GT/s   | 26         | 2.20 GHz                 | 3.40 GHz            | 185 W  | DDR4-2933    |
| Intel® Xeon® Processor Gold 5318Y     | Icelake   | QXS2   | M1       | 36MB  | 11.2GT/s   | 24         | 2.10 GHz                 | 3.40 GHz            | 165 W  | DDR4-2933    |
| Intel® Xeon® Processor Gold 5318S     | Icelake   | QXRX   | M1       | 36MB  | 11.2GT/s   | 24         | 2.10 GHz                 | 3.40 GHz            | 165 W  | DDR4-2933    |
| Intel® Xeon® Processor Gold 5318N     | Icelake   | QXS4   | M1       | 36MB  | 11.2GT/s   | 24         | 2.10 GHz                 | 3.40 GHz            | 150 W  | DDR4-2667    |
| Intel® Xeon® Processor Gold 5317      | Icelake   | QXRM   | M1       | 18MB  | 11.2GT/s   | 12         | 3.00 GHz                 | 3.60 GHz            | 150 W  | DDR4-2933    |
| Intel® Xeon® Processor Gold 5315Y     | Icelake   | QXRR   | M1       | 12MB  | 11.2GT/s   | 8          | 3.20 GHz                 | 3.60 GHz            | 140 W  | DDR4-2933    |
| Intel® Xeon® Processor Silver 4316    | Icelake   | QXS5   | M1       | 30MB  | 10.4GT/s   | 20         | 2.30 GHz                 | 3.40 GHz            | 150 W  | DDR4-2667    |
| Intel® Xeon® Processor Silver 4314    | Icelake   | QXS8   | M1       | 24MB  | 11.2GT/s   | 16         | 2.40 GHz                 | 3.40 GHz            | 135 W  | DDR4-2667    |
| Intel® Xeon® Processor Silver 4310T   | Icelake   | QXRP   | M1       | 15MB  | 11.2GT/s   | 10         | 2.30 GHz                 | 3.40 GHz            | 105 W  | DDR4-2667    |
| Intel® Xeon® Processor Silver 4310    | Icelake   | QXRN   | M1       | 18MB  | 10.4GT/s   | 12         | 2.10 GHz                 | 3.30 GHz            | 120 W  | DDR4-2667    |
| Intel® Xeon® Processor Silver 4309Y   | Icelake   | QXRS   | M1       | 12MB  | 11.2GT/s   | 8          | 2.80 GHz                 | 3.60 GHz            | 105 W  | DDR4-2667    |

**Memory (Memory actually maximum frequency will follow memory controller's spec of CPU you used)**

| Product Name       | Memory Type | Module Supplier | Size | Chip Brand  | Rank | Voltage | Data Transfer Rate | Error Correction | CAS Latency | Pins    |
|--------------------|-------------|-----------------|------|-------------|------|---------|--------------------|------------------|-------------|---------|
| DDR4 RDIMM         |             |                 |      |             |      |         |                    |                  |             |         |
| M393A2K43DB2-CVFBQ | DDR4        | Samsung         | 16GB | Samsung-IDT | 2Rx8 | 1.2v    | 2933MHz            | ECC Registered   | 21          | 288-pin |
| M393A4K40DB2-CVFBQ | DDR4        | Samsung         | 32GB | Samsung-IDT | 2Rx4 | 1.2v    | 2933MHz            | ECC Registered   | 21          | 288-pin |
| M393A8G40AB2-CVFBY | DDR4        | Samsung         | 64GB | Samsung-IDT | 2Rx4 | 1.2v    | 2933MHz            | ECC Registered   | 21          | 288-pin |

|                         |      |          |      |                      |      |      |         |                |    |         |
|-------------------------|------|----------|------|----------------------|------|------|---------|----------------|----|---------|
| MTA9ASF2G72PZ-2G9E1UI   | DDR4 | Micron   | 16GB | Micron-Rambus        | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT32G4RFD4293.2G9E2.001 | DDR4 | CRUCIAL  | 32GB | Micron               | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT32G4RFD4293.36FE2     | DDR4 | CRUCIAL  | 32GB | Micron               | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF4G72PZ-2G9E2TG  | DDR4 | Micron   | 32GB | Micron-Montage       | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF4G72PZ-2G9E2VG  | DDR4 | Micron   | 32GB | Micron-IDT           | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF4G72PZ-2G9E2UG  | DDR4 | Micron   | 32GB | Micron-Rambus        | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF4G72PZ-2G9E2TI  | DDR4 | Micron   | 32GB | Micron-Montage       | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA18ASF4G72PDZ-2G9E1TI | DDR4 | Micron   | 32GB | Micron-Montage       | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF8G72PZ-2G9E1TI  | DDR4 | Micron   | 64GB | Micron-Montage       | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA36ASF8G72PZ-2G9E1VI  | DDR4 | Micron   | 64GB | Micron-IDT           | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| HMA82GR7CJR8N-WM T4     | DDR4 | SKhynix  | 16GB | SKhynix-Montage      | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| KSM29RD4/32HDR          | DDR4 | Kingston | 32GB | SKhynix-Rambus       | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| NT32GA72D4NBX3P-IX      | DDR4 | Nanya    | 32GB | Nanya-Montage or IDT | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| HMA82GR7DJR8N-XN T8     | DDR4 | SKhynix  | 16GB | SKhynix-Rambus       | 2Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMA82GR7DJR8N-XN TG     | DDR4 | SKhynix  | 16GB | SKhynix -IDT         | 2Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMA84GR7DJR4N-XN T4     | DDR4 | SKhynix  | 32GB | SKhynix-Montage      | 2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMA84GR7DJR4N-XN TG     | DDR4 | SKhynix  | 32GB | SKhynix-IDT          | 2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMAA8GR7CJR4N-XN T4     | DDR4 | SKhynix  | 64GB | SKhynix-Montage      | 2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMAA8GR7CJR4N-XN TG     | DDR4 | SKhynix  | 64GB | SKhynix-IDT          | 2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| HMAA8GR7CJR4N-XN T8     | DDR4 | SKhynix  | 64GB | SKhynix-Rambus       | 2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA9ASF1G72PZ-3G2R1VI   | DDR4 | Micron   | 8GB  | Micron-IDT           | 1Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA9ASF1G72PZ-3G2R1TI   | DDR4 | Micron   | 8GB  | Micron-Montage       | 1Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF2G72PZ-3G2E2TI  | DDR4 | Micron   | 16GB | Micron-Montage       | 1Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF2G72PDZ-3G2R1UI | DDR4 | Micron   | 16GB | Micron-Rambus        | 2Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF2G72PDZ-3G2R1VI | DDR4 | Micron   | 16GB | Micron-IDT           | 2Rx8 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |

|                         |      |         |       |                 |        |      |         |                |    |         |
|-------------------------|------|---------|-------|-----------------|--------|------|---------|----------------|----|---------|
| MTA18ASF2G72PDZ-3G2R1TI | DDR4 | Micron  | 16GB  | Micron-Montage  | 2Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF2G72PZ-3G2R1UI  | DDR4 | Micron  | 16GB  | Micron-Rambus   | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF2G72PZ-3G2R1TI  | DDR4 | Micron  | 16GB  | Micron-Montage  | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA9ASF2G72PZ-3G2F1UI   | DDR4 | Micron  | 16GB  | Micron-Rambus   | 1Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF4G72PDZ-3G2B2TI | DDR4 | Micron  | 32GB  | Micron-Montage  | 2Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA36ASF4G72PZ-3G2J3UI  | DDR4 | Micron  | 32GB  | Micron-Rambus   | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA36ASF4G72PZ-3G2R1UI  | DDR4 | Micron  | 32GB  | Micron-Rambus   | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF4G72PDZ-3G2F1VI | DDR4 | Micron  | 32GB  | Micron-IDT      | 2Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF4G72PDZ-3G2F1UI | DDR4 | Micron  | 32GB  | Micron-Rambus   | 2Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF4G72PZ-3G2F1TI  | DDR4 | Micron  | 32GB  | Micron-Montage  | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA18ASF4G72PZ-3G2F1UI  | DDR4 | Micron  | 32GB  | Micron-Rambus   | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA36ASF8G72PZ-3G2E1VI  | DDR4 | Micron  | 64GB  | Micron-IDT      | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| MTA36ASF8G72PZ-3G2F1VI  | DDR4 | Micron  | 64GB  | Micron-IDT      | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A2K40EB3-CWEGQ      | DDR4 | Samsung | 16GB  | Samsung-Rambus  | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A2K43EB3-CWEBQ      | DDR4 | Samsung | 16GB  | Samsung-IDT     | 2Rx8   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40DB3-CWECQ      | DDR4 | Samsung | 32GB  | Samsung-Montage | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40DB3-CWEBQ      | DDR4 | Samsung | 32GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40DB3-CWEBY      | DDR4 | Samsung | 32GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40DB3-CWEGQ      | DDR4 | Samsung | 32GB  | Samsung-Rambus  | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4G40BB3-CWEGQ      | DDR4 | Samsung | 32GB  | Samsung-Rambus  | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4G40AB3-CWEBQ      | DDR4 | Samsung | 32GB  | Samsung-IDT     | 1Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40EB3-CWEGQ      | DDR4 | Samsung | 32GB  | Samsung-Rambus  | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40EB3-CWECQ      | DDR4 | Samsung | 32GB  | Samsung-Montage | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A4K40EB3-CWEBY      | DDR4 | Samsung | 32GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A8G40AB2-CWEBQ      | DDR4 | Samsung | 64GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A8G40AB2-CWEBY      | DDR4 | Samsung | 64GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393A8G40BB4-CWEBY      | DDR4 | Samsung | 64GB  | Samsung-IDT     | 2Rx4   | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |
| M393AAG40M32-CAEBQ      | DDR4 | Samsung | 128GB | Samsung         | 2S2Rx4 | 1.2v | 3200MHz | ECC Registered | 22 | 288-pin |

|   |      |          |             |                 |          |                 |                                       |                |      |            |
|---|------|----------|-------------|-----------------|----------|-----------------|---------------------------------------|----------------|------|------------|
| M393AAG40M32-CAEBY  | DDR4 | Samsung  | 128GB       | Samsung         | 2S2Rx4   | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| TR416G32S422-XNC  | DDR4 | V-color  | 16GB        | SKhynix-Rambus  | 1Rx4     | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| KSM32RS8/16MER  | DDR4 | Kingston | 16GB        | Micron-Rambus   | 1Rx8     | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| KSM32RD8/16MRR  | DDR4 | Kingston | 16GB        | Micron-Rambus   | 2Rx8     | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| KSM32RS4/32MER  | DDR4 | Kingston | 32GB        | Micron-Rambus   | 1Rx4     | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| KSM32RD4/32MRR  | DDR4 | Kingston | 32GB        | Micron-Rambus   | 2Rx4     | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| DDR4 LRDIMM   |      |          |             |                 |          |                 |                                       |                |      |            |
| M386A8K40CM2-CVFBY  | DDR4 | Samsung  | 64GB        | Samsung-IDT     | 4DRx4    | 1.2v            | 2933MHz                               | ECC Registered | 21   | 288-pin    |
| M386AAG40MMB-CVFC0  | DDR4 | Samsung  | 128GB       | Samsung         | 4DRx4    | 1.2v            | 2933MHz                               | ECC Registered | 21   | 288-pin    |
| M386A8K40DM2-CWELQ  | DDR4 | Samsung  | 64GB        | Samsung-IDT     | 4DRx4    | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| M386A8K40DM2-CWEZY  | DDR4 | Samsung  | 64GB        | Samsung-Montage | 4DRx4    | 1.2v            | 3200MHz                               | ECC Registered | 22   | 288-pin    |
| HDD (If the system build-in with RAID card ,please refer to RAID card QVL list) |      |          |             |                 |          |                 |                                       |                |      |            |
| Product Name  | Type | Vendor   | Form Factor | Format          | Capacity | Interface Speed | Series                                | Cache          | RPM  | Encryption |
| Seagate Enterprise Capacity 2.5 HDD   |      |          |             |                 |          |                 |                                       |                |      |            |
| ST1000NX0313  | SATA | Seagate  | 2.5"        | 512e            | 1TB      | 6Gb/s           | Exos 7E2000 (Enterprise Capacity V.3) | 128MB          | 7200 | N/A        |
| ST2000NX0243  | SATA | Seagate  | 2.5"        | 4Kn             | 2TB      | 6Gb/s           | Exos 7E2000 (Enterprise Capacity V.3) | 128MB          | 7200 | N/A        |
| ST2000NX0253  | SATA | Seagate  | 2.5"        | 512E            | 2TB      | 6Gb/s           | Exos 7E2000 (Enterprise Capacity V.3) | 128MB          | 7200 | N/A        |
| SATA/SAS SSD  |      |          |             |                 |          |                 |                                       |                |      |            |
| Product Name  | Type | Vendor   | Form Factor | Interface       | Capacity | Interface Speed | FW                                    | N              |      |            |
| SATA SSD  |      |          |             |                 |          |                 |                                       |                |      |            |
| MTFDDAK3T8TDS-1AW1ZABYY (5300 PRO)  | SSD  | Micron   | 2.5"        | SATA            | 3.84TB   | 6Gb/s           |                                       |                |      |            |
| MTFDDAK1T9TDS-1AW1ZABYY (5300 PRO)  | SSD  | Micron   | 2.5"        | SATA            | 1.92TB   | 6Gb/s           |                                       |                |      |            |
| MZ7L3480HCHQ-00A07 PM893 Series   | SSD  | Samsung  | 2.5"        | SATA            | 480GB    | 6Gb/s           |                                       |                |      |            |
| MZ7L33T8HBLT-00A07 PM893 Series   | SSD  | Samsung  | 2.5"        | SATA            | 3.84TB   | 6Gb/s           |                                       |                |      |            |
| SSB1K9GTLCW-D2-SME1720GBT ESM1720 Series  | SSD  | Phison   | 2.5"        | SATA            | 1.92TB   | 6Gb/s           |                                       |                |      |            |
| PCIe SSD  |      |          |             |                 |          |                 |                                       |                |      |            |
| Product Name  | Type | Vendor   | Form Factor | Interface       | Capacity | Interface Speed | Note                                  |                |      |            |
| PCIe SSD  |      |          |             |                 |          |                 |                                       |                |      |            |
| SSDPEDKX040T701 P4500 Series PCIe Gen3 x4 4TB                                   | PCIe | Intel    | PCI-E 3.0   | PCIe(NVMe)      | 4TB      | PCIe Gen3 x4    |                                       |                |      |            |
| Samsung PM1725b MZPLL3T2HAJQ PCIe Gen3 x8 3.2TB                                 | PCIe | Samsung  | PCI-E 3.0   | PCIe(NVMe)      | 3.2TB    | PCIe Gen3 x8    |                                       |                |      |            |
| U.2   |      |          |             |                 |          |                 |                                       |                |      |            |
| Product Name  | Type | Vendor   | Form Factor | Interface       | Capacity | Interface Speed | Note                                  |                |      |            |
| SSDPF2KX038TZ D7-P5510 Series   | U.2  | Intel    | 2.5" 15mm   | SFF8639(NVMe)   | 3.84TB   | PCIe Gen4 x4    |                                       |                |      |            |
| U.2   |      |          |             |                 |          |                 |                                       |                |      |            |
| SSDPF2KX038TZ D7-P5510 Series   | U.2  | Intel    | 2.5" 15mm   | SFF8639(NVMe)   | 3.84TB   | PCIe Gen4 x4    |                                       |                |      |            |

|                                      |                                     |                         |                |                          |  |                     |                       |      |  |
|--------------------------------------|-------------------------------------|-------------------------|----------------|--------------------------|--|---------------------|-----------------------|------|--|
| MZQL23T8HCLS PM9A3 Series            | U.2                                 | Samsung                 | 2.5" 7mm       | SFF8639(NVMe)            | 3.84TB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDHAL3T2TDR 9300 Max Series        | U.2                                 | Micron                  | 2.5" 15mm      | SFF8639(NVMe)            | 3.2TB                                      | PCIe Gen3 x4        |                       |      |  |
| U.3                                  |                                     |                         |                |                          |  |                     |                       |      |  |
| KCM61RUL3T84 CM6-R Series            | U.3                                 | KIOXIA                  | 2.5" 15mm      | SFF8639(NVMe)            | 3.84TB                                     | PCIe Gen4 x4        |                       |      |  |
| KCD61LUL3T84 CD6-R Series            | U.3                                 | KIOXIA                  | 2.5" 15mm      | SFF8639(NVMe)            | 3.84TB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDKCB7T6TDZ 7400 Pro Series        | U.3                                 | Micron                  | 2.5" 7mm       | SFF8639(NVMe)            | 7.68TB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDKCB7T6TFR 7450 Pro Series        | U.3                                 | Micron                  | 2.5" 7mm       | SFF8639(NVMe)            | 7.68TB                                     | PCIe Gen4 x4        |                       |      |  |
| <b>M.2</b>                           |                                     |                         |                |                          |  |                     |                       |      |  |
| Product Name                         | Type                                | Vendor                  | Form Factor    | Interface                | Capacity                                   | Interface Speed     | Note                  |      |  |
| M.2                                  |                                     |                         |                |                          |  |                     |                       |      |  |
| MZ1L2960HCJR PM9A3 Series            | M.2                                 | Samsung                 | 22110          | PCIe(NVMe)               | 960GB                                      | PCIe Gen4 x4        |                       |      |  |
| MZ1L21T9HCLS PM9A3 Series            | M.2                                 | Samsung                 | 22110          | PCIe(NVMe)               | 1.92TB                                     | PCIe Gen4 x4        |                       |      |  |
| MZ-1LB1T9N 983 DCT Series            | M.2                                 | Samsung                 | 22110          | PCIe(NVMe)               | 1.92TB                                     | PCIe Gen3 x4        |                       |      |  |
| MTFDKBA800TFC 800GB 7400 Max Series  | M.2                                 | Micron                  | 2280           | PCIe(NVMe)               | 800GB                                      | PCIe Gen4 x4        |                       |      |  |
| MTFDKBG3T8TDZ 3.84TB 7400 Pro Series | M.2                                 | Micron                  | 22110          | PCIe(NVMe)               | 3.84TB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDKBG1T9TDZ 1.92TB 7400 Pro Series | M.2                                 | Micron                  | 22110          | PCIe(NVMe)               | 1.92TB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDKBA800TFS 800GB 7450 Max Series  | M.2                                 | Micron                  | 2280           | PCIe(NVMe)               | 800 GB                                     | PCIe Gen4 x4        |                       |      |  |
| MTFDKBG3T8TFR 3.84TB 7450 Pro Series | M.2                                 | Micron                  | 22110          | PCIe(NVMe)               | 3.84TB                                     | PCIe Gen4 x4        |                       |      |  |
| CA6-8D1024 CA6 Series                | M.2                                 | SSSTC                   | 2280           | PCIe(NVMe)               | 1TB  | PCIe Gen4 x4        |                       |      |  |
| <b>M.2 Expansion PCIe Card</b>       |                                     |                         |                |                          |  |                     |                       |      |  |
| Product Name                         | Type                                | Vendor                  | Form Factor    | Interface                | Max. Channels                              | Interface Speed     | Note                  |      |  |
| CMT4034                              | PCIe                                | Gigabyte                | 22110          | PCIe(NVMe)               | 4  | PCIe Gen3 x16       | -                     |      |  |
| <b>RAID Cards</b>                    |                                     |                         |                |                          |  |                     |                       |      |  |
| Product Name                         | RAID-on-Chip Controller             | Host Bus Type           | Internal Ports | Internal Connectors      | External Ports                             | External Connectors | Data Transfer Rates   | Note |  |
| GIGABYTE Storage Cards               |                                     |                         |                |                          |  |                     |                       |      |  |
| CRA4448                              | LSI SAS 3108                        | PCIe Gen3 x8            | 8              | 2 x Mini-SAS HD SFF-8643 | -  | -                   | Up to 12Gb/s per port |      |  |
| LSI RAID Controller Cards            |                                     |                         |                |                          |  |                     |                       |      |  |
| MegaRAID 9560-16i without Tri-mode   | SAS3916 Tri-Mode RAID-on-Chip (ROC) | PCIe Gen4 x8            | 16             | 2 x8 SlimSAS SFF-8654    | -  | -                   | Up to 12Gb/s per port |      |  |
| LSI Host Bus Adapters (HBAs)         |                                     |                         |                |                          |  |                     |                       |      |  |
| LSI SAS 9500-16i without Tri-mode    | SAS3816                             | PCIe Gen4 x8            | 16             | 2 x8 SlimSAS SFF-8654    | -  | -                   | Up to 12Gb/s per port |      |  |
| LSI Tri-mode card                    |                                     |                         |                |                          |  |                     |                       |      |  |
| MegaRAID 9560-16i with Tri-mode      | SAS3916 Tri-Mode RAID-on-Chip (ROC) | PCIe Gen4 x8            | 16             | 2 x8 SlimSAS SFF-8654    | -  | -                   | Up to 12Gb/s per port |      |  |
| LSI SAS 9500-16i with Tri-mode       | SAS3816                             | PCIe Gen4 x8            | 16             | 2 x8 SlimSAS SFF-8654    | -  | -                   | Up to 12Gb/s per port |      |  |
| <b>LAN Cards</b>                     |                                     |                         |                |                          |  |                     |                       |      |  |
| Product Name                         | Connector                           | System Interface Type   | # of Ports     | Data Rate                | Note                                       |                     |                       |      |  |
| CLN4D40                              | SFP28                               | PCIe Gen3 x8            | Dual           | 25Gb/s per port          | Broadcom BCM57414                          |                     |                       |      |  |
| CLN4B20                              | RJ-45                               | PCIe Gen3 x8            | Dual           | 10Gb/s per port          | Broadcom BCM57416                          |                     |                       |      |  |
| CLN4A10                              | RJ-45                               | PCIe Gen3 x8            | Dual           | 1Gb/s per port           | Broadcom BCM5720L                          |                     |                       |      |  |
| CLNCD42                              | SFP28                               | <b>QCP</b> PCIe Gen3 x8 | Dual           | 25Gb/s per port          | Broadcom BCM57414 / Support <b>QCP 3.0</b> |                     |                       |      |  |

|  |        |                          |        |                  |  |
|--|--------|--------------------------|--------|------------------|--|
| CLNCB22  | RJ-45  | <b>OCF</b> PCIe Gen3 x8  | Dual   | 10Gb/s per port  | Broadcom BCM57416 / Support <b>OCF 3.0</b>                             |
| CLNCA12  | RJ-45  | <b>OCF</b> PCIe Gen2 x2  | Dual   | 1Gb/s per port   | Broadcom BCM5720 / Support <b>OCF 3.0</b>                              |
| CLN4831  | SFP+   | PCIe Gen2 x8             | Single | 10Gb/s per port  | INTEL 82599EN  |
| CLN4832  | SFP+   | PCIe Gen2 x8             | Dual   | 10Gb/s per port  | INTEL 82599ES  |
| CLN4751  | QSFP+  | PCIe Gen3 x8             | Single | 40Gb/s per port  | INTEL XL710  |
| CLN4752  | QSFP+  | PCIe Gen3 x8             | Dual   | 40Gb/s per port  | INTEL XL710  |
| CLN4121  | RJ-45  | PCIe Gen3 x4             | Single | 10Gb/s per port  | INTEL X550-AT  |
| CLN4222  | RJ-45  | PCIe Gen3 x4             | Dual   | 10Gb/s per port  | INTEL X550-AT2   |
| CLN4224  | RJ-45  | PCIe Gen3 x4             | Quad   | 10Gb/s per port  | INTEL X550-AT2   |
| CLN4C42  | SFP28  | PCIe Gen3 x16            | Dual   | 25Gb/s per port  | Mellanox ConnectX-4  |
| CLN4C44  | SFP28  | PCIe Gen3 x16            | Quad   | 25Gb/s per port  | Mellanox ConnectX-4  |
| CLN4M34  | SFP28  | PCIe Gen3 x16            | Quad   | 10Gb/s per port  | Mellanox ConnectX-4  |
| CLN4312  | RJ-45  | PCIe Gen2 x4             | Dual   | 1Gb/s per port   | INTEL i350-AM2   |
| CLN4314  | RJ-45  | PCIe Gen2 x4             | Quad   | 1Gb/s per port   | INTEL i350-AM4   |
| Intel_10GbE  |        |                          |        |                  |  |
| Intel® Ethernet Converged Network Adapter X710-T4    | RJ-45  | PCIe Gen3 x8             | Quad   | 10Gb/s per port  |  |
| Intel_25GbE  |        |                          |        |                  |  |
| Intel® Ethernet Network Adapter E810-XXVDA2 for OCP  | SFP28  | <b>OCF</b> PCIe Gen4 x8  | Dual   | 25Gb/s per port  | Support OCP 3.0  |
| Intel® Ethernet Network Adapter XXV710-DA2           | SFP28  | PCIe Gen3 x8             | Dual   | 25Gb/s per port  |  |
| Intel_40GbE  |        |                          |        |                  |  |
| Intel® Ethernet Converged Network Adapter XL710-QDA2 | QSFP+  | PCIe Gen3 x8             | Dual   | 40Gb/s per port  |  |
| Intel_100GbE   |        |                          |        |                  |  |
| Intel® Ethernet Network Adapter E810-CQDA2 for OCP   | QSFP28 | <b>OCF</b> PCIe Gen4 x16 | Dual   | 100Gb/s per port | Support OCP 3.0  |
| Intel® Ethernet Network Adapter E810-CQDA2           | QSFP28 | PCIe Gen4 x16            | Dual   | 100Gb/s per port |  |
| Mellanox ConnectX                                    |        |                          |        |                  |  |
| MCX631102AN-ADAT                                     | SFP28  | PCIe Gen4 x8             | Dual   | 25Gb/s per port  | ConnectX®-6 <b>Dx</b> without Crypto                                   |
| MCX631432AN-ADAB                                     | SFP28  | <b>OCF</b> PCIe Gen4 x8  | Dual   | 25Gb/s per port  | ConnectX®-6 <b>Lx</b> without Crypto / Support OCP 3.0                 |
| MCX623105AN-CDAT                                     | QSFP56 | PCIe Gen4 x16            | Single | 100Gb/s per port | ConnectX®-6 <b>Dx</b> No Crypto, No Secure Boot                        |
| MCX623106AN-CDAT                                     | QSFP56 | PCIe Gen4 x16            | Dual   | 100Gb/s per port | ConnectX®-6 <b>Dx</b> No Crypto, No Secure Boot                        |
| MCX623435AC-VDAB                                     | QSFP56 | <b>OCF</b> PCIe Gen4 x16 | Single | 200Gb/s per port | ConnectX®-6 <b>Dx</b> With Crypto1, With Secure Boot / Support OCP 3.0 |
| MCX613106A-VDAT                                      | QSFP56 | PCIe Gen4 x16            | Dual   | 200Gb/s per port | Mellanox ConnectX-6 EN   |
| MCX565M-CDAB   | QSFP28 | <b>OCF</b> PCIe Gen4 x16 | Single | 100Gb/s per port | ConnectX®-5 Ex <b>Multi-Host</b> / Support OCP 3.0                     |
| MCX623432AN-ADAB                                     | SFP28  | <b>OCF</b> PCIe Gen4 x16 | Dual   | 25Gb/s per port  | ConnectX®-6 <b>Dx</b> No Crypto, No Secure Boot / Support OCP 3.0      |
| MCX566A-CDAB   | QSFP28 | <b>OCF</b> PCIe Gen4 x16 | Dual   | 100Gb/s per port | Mellanox ConnectX-5 Ex EN / Support OCP 3.0                            |
| MCX516A-CCAT   | QSFP28 | PCIe Gen3 x16            | Dual   | 100Gb/s per port | Mellanox ConnectX-5 EN   |
| MCX4121A-ACAT  | SFP28  | PCIe Gen3 x8             | Dual   | 25Gb/s per port  | Mellanox ConnectX-4 Lx EN  |

Mellanox VPI Adapter Cards

|                  |        |                          |        |                  |  |
|------------------|--------|--------------------------|--------|------------------|--|
| MCX683105AN-HDAT | QSFP   | PCIe Gen4 x16            | Single | 200Gb/s per port | Mellanox ConnectX-6 DE VPI (InfiniBand)          |
| MCX653106A-HDAT  | QSFP56 | PCIe Gen4 x16            | Dual   | 200Gb/s per port | Mellanox ConnectX-6 Ex VPI (InfiniBand)          |
| MCX653436A-HDA   | QSFP56 | <b>OCF</b> PCIe Gen4 x16 | Dual   | 200Gb/s per port | Mellanox ConnectX-6 Ex VPI (InfiniBand) / OCP3.0 |
| MCX653105A-HDAT  | QSFP56 | PCIe Gen4 x16            | Single | 200Gb/s per port | Mellanox ConnectX-6 Ex VPI (InfiniBand)          |
| MCX653105A-ECAT  | QSFP56 | PCIe Gen4 x16            | Single | 100Gb/s per port | Mellanox ConnectX-6 Ex VPI (InfiniBand)          |
| MCX653106A-ECAT  | QSFP56 | PCIe Gen4 x16            | Dual   | 100Gb/s per port | Mellanox ConnectX-6 Ex VPI (InfiniBand)          |
| MCX556A-EDAT     | QSFP28 | PCIe Gen4 x16            | Dual   | 100Gb/s per port | Mellanox ConnectX-5 Ex VPI (InfiniBand)          |

Broadcom (Emulex) Ethernet Networking Adapters

|                        |        |                         |      |                  |                                   |
|------------------------|--------|-------------------------|------|------------------|-----------------------------------|
| BCM957508-P2100G       | QSFP56 | PCIe Gen4 x16           | Dual | 100Gb/s per port | BCM57508                          |
| BCM957504-N425G        | SFP28  | <b>OCF</b> PCIe 4.0     | Quad | 25Gb/s per port  | BCM57504 / Support <b>OCF 3.0</b> |
| BCM957508-N2100G       | QSFP56 | <b>OCF</b> PCIe 4.0     | Dual | 100Gb/s per port | BCM57508 / Support <b>OCF 3.0</b> |
| BCM957416N4160C-N210TP | RJ-45  | <b>OCF</b> PCIe Gen3 x8 | Dual | 10Gb/s per port  | BCM57416 / Support <b>OCF 3.0</b> |
| BCM957416A4160C        | RJ-45  | PCIe Gen3 x8            | Dual | 10Gb/s per port  | BCM5741 (P210TP)                  |

USB Device

| Product Name              | Type   | Vendor       | Capacity | Note |  |  |  |  |  |
|---------------------------|--------|--------------|----------|------|--|--|--|--|--|
| USB 3.0                   |        |              |          |      |  |  |  |  |  |
| PURE CLASSIC X176B1FWBO75 | HDD    | Gigabyte     | 500G     |      |  |  |  |  |  |
| GoFlex STAA500305         | HDD    | Seagate      | 500G     |      |  |  |  |  |  |
| TOSHIBA CANVIO BASIC      | HDD    | Toshiba      | 500G     |      |  |  |  |  |  |
| NA317U+                   | Device | ineo         |          |      |  |  |  |  |  |
| SST-TS13                  | Device | Silver Stone |          |      |  |  |  |  |  |
| S1-DS3-Plus               | Device | CyberSLIM    |          |      |  |  |  |  |  |
| MB981U3-1S                | Device | ICYDOCK      |          |      |  |  |  |  |  |
| i310-SB3(6G)              | Device | STARDOM      |          |      |  |  |  |  |  |