

"H231-G20" Qualification Vender List

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| Intel CPU                                       |                |        |          |             |            |            |                          |                     |       |              |  |
|---|----------------|--------|----------|-------------|------------|------------|--------------------------|---------------------|-------|--------------|--|
| Product Name                                    | Code Name      | Q-Spec | Stepping | Cache       | System Bus | # of Cores | Processor Base Frequency | Max Turbo Frequency | TDP   | Memory Types |  |
| Purley - Intel® Xeon® Processor Scalable Family |                |        |          |             |            |            |                          |                     |       |              |  |
| Intel® Xeon® Processor Platinum 8176M           | SKYLAKE-S      | QM7R   | H0       | 38.5 MB L3  | 10.4 GT/s  | 28         | 2.10 GHz                 | 3.80 GHz            | 165 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8176            | SKYLAKE-S      | QM03   | H0       | 38.5 MB L3  | 10.4 GT/s  | 28         | 2.10 GHz                 | 3.80 GHz            | 165 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8170            | SKYLAKE-S      | QM0C   | H0       | 35.75 MB L3 | 10.4 GT/s  | 26         | 2.10 GHz                 | 3.70 GHz            | 165 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8164            | SKYLAKE-S      | Q MS8  | H0       | 35.75 MB L3 | 10.4 GT/s  | 26         | 2.00 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8160T           | SKYLAKE-S      | QMRG   | H0       | 33 MB L3    | 10.4 GT/s  | 24         | 2.10 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8160            | SKYLAKE-S      | QMRV   | H0       | 33 MB L3    | 10.4 GT/s  | 24         | 2.10 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8153            | SKYLAKE-S      | QMS7   | H0       | 22 MB L3    | 10.4 GT/s  | 16         | 2.00 GHz                 | 2.80 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6152                | SKYLAKE-S      | QMRZ   | H0       | 30.25 MB L3 | 10.4 GT/s  | 22         | 2.10 GHz                 | 3.70 GHz            | 140 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6150                | SKYLAKE-S      | QM06   | H0       | 24.75 MB L3 | 10.4 GT/s  | 18         | 2.70 GHz                 | 3.70 GHz            | 165 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6148                | SKYLAKE-S      | QMS1   | H0       | 27.5 MB L3  | 10.4 GT/s  | 20         | 2.40 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6146                | SKYLAKE-S      | QN7C   | H0       | 24.75 MB L3 | 10.4 GT/s  | 12         | 3.20 GHz                 | 4.20 GHz            | 165 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6144                | SKYLAKE-S      | QN7D   | H0       | 24.75 MB L3 | 10.4 GT/s  | 8          | 3.50 GHz                 | 4.20 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6142M               | SKYLAKE-S      | QMRW   | H0       | 22 MB L3    | 10.4 GT/s  | 16         | 2.60 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6142                | SKYLAKE-S      | QMRU   | H0       | 22 MB L3    | 10.4 GT/s  | 16         | 2.60 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6140M               | SKYLAKE-S      | QMRU   | H0       | 24.75 MB L3 | 10.4 GT/s  | 18         | 2.30 GHz                 | 3.70 GHz            | 140 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6140                | SKYLAKE-S      | QMSR   | H0       | 24.75 MB L3 | 10.4 GT/s  | 18         | 2.30 GHz                 | 3.70 GHz            | 140 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6138T               | SKYLAKE-S      | Q MS9  | H0       | 27.5 MB L3  | 10.4 GT/s  | 20         | 2.00 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6138                | SKYLAKE-S      | QMS0   | H0       | 27.5 MB L3  | 10.4 GT/s  | 20         | 2.00 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6136                | SKYLAKE-S      | QMRX   | H0       | 24.75 MB L3 | 10.4 GT/s  | 12         | 3.00 GHz                 | 3.70 GHz            | 150 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6134                | SKYLAKE-S      | QMLR   | H0       | 24.75 MB L3 | 10.4 GT/s  | 8          | 3.20 GHz                 | 3.70 GHz            | 130 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6132                | SKYLAKE-S      | QN33   | H0       | 19.25 MB L3 | 10.4 GT/s  | 14         | 2.60 GHz                 | 3.70 GHz            | 140 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6130T               | SKYLAKE-S      | QN38   | H0       | 22 MB L3    | 10.4 GT/s  | 16         | 2.10 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6130                | SKYLAKE-S      | QMS6   | H0       | 22 MB L3    | 10.4 GT/s  | 16         | 2.10 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6128                | SKYLAKE-S      | QN34   | H0       | 19.25 MB L3 | 10.4 GT/s  | 6          | 3.40 GHz                 | 3.70 GHz            | 115 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6126T               | SKYLAKE-S      | QN39   | H0       | 19.25 MB L3 | 10.4 GT/s  | 12         | 2.60 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 6126                | SKYLAKE-S      | QMRV   | H0       | 19.25 MB L3 | 10.4 GT/s  | 12         | 2.60 GHz                 | 3.70 GHz            | 125 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 5122                | SKYLAKE-S      | QMRN   | H0       | 16.5 MB L3  | 10.4 GT/s  | 4          | 3.60 GHz                 | 3.70 GHz            | 105 W | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 5120T               | SKYLAKE-S      | QMXL   | M0       | 19.25 MB L3 | 10.4 GT/s  | 14         | 2.20 GHz                 | 3.20 GHz            | 105 W | DDR4-2400    |  |
| Intel® Xeon® Processor Gold 5120                | SKYLAKE-S      | QMXJ   | M0       | 19.25 MB L3 | 10.4 GT/s  | 14         | 2.20 GHz                 | 3.20 GHz            | 105 W | DDR4-2400    |  |
| Intel® Xeon® Processor Gold 5119T               | SKYLAKE-S      | QN11   | M0       | 19.25 MB L3 | 10.4 GT/s  | 14         | 1.90 GHz                 | 3.20 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Gold 5118                | SKYLAKE-S      | QMXH   | M0       | 16.5 MB L3  | 10.4 GT/s  | 12         | 2.30 GHz                 | 3.20 GHz            | 105 W | DDR4-2400    |  |
| Intel® Xeon® Processor Gold 5115                | SKYLAKE-S      | QMXG   | M0       | 13.75 MB L3 | 10.4 GT/s  | 10         | 2.40 GHz                 | 3.20 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4116T             | SKYLAKE-S      | QN7B   | M0       | 16.5 MB L3  | 9.6 GT/s   | 12         | 2.10 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4116              | SKYLAKE-S      | QN1J   | M0       | 16.5 MB L3  | 9.6 GT/s   | 12         | 2.10 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4114T             | SKYLAKE-S      | QN7A   | U0       | 13.75 MB L3 | 9.6 GT/s   | 10         | 2.20 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4114              | SKYLAKE-S      | QN0B   | U0       | 13.75 MB L3 | 9.6 GT/s   | 10         | 2.20 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4112              | SKYLAKE-S      | QN0E   | U0       | 9.25 MB L3  | 9.6 GT/s   | 4          | 2.60 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4110              | SKYLAKE-S      | QN09   | U0       | 11 MB L3    | 9.6 GT/s   | 8          | 2.10 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4109T             | SKYLAKE-S      | QN0F   | U0       | 11 MB L3    | 9.6 GT/s   | 8          | 2.00 GHz                 | 3.00 GHz            | 70 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Silver 4108              | SKYLAKE-S      | QN0A   | U0       | 11 MB L3    | 9.6 GT/s   | 8          | 1.80 GHz                 | 3.00 GHz            | 85 W  | DDR4-2400    |  |
| Intel® Xeon® Processor Bronze 3106              | SKYLAKE-S      | QN0C   | U0       | 11 MB L3    | 9.6 GT/s   | 8          | 1.70 GHz                 | None                | 85 W  | DDR4-2133    |  |
| Intel® Xeon® Processor Bronze 3104              | SKYLAKE-S      | QN0D   | U0       | 9.25 MB L3  | 9.6 GT/s   | 6          | 1.70 GHz                 | None                | 85 W  | DDR4-2133    |  |
| Purley - Intel® Xeon® Processor Scalable Family |                |        |          |             |            |            |                          |                     |       |              |  |
| Intel® Xeon® Processor Platinum 8276M           | CascadeLake SP | QRAW   | B0       | 38.5MB      | 10.4 GT/s  | 28         | 2.2 GHz                  | 4.00 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8276L           | CascadeLake SP | QRAV   | B0       | 38.5MB      | 10.4 GT/s  | 28         | 2.2 GHz                  | 4.00 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8260M           | CascadeLake SP | QRC4   | B0       | 33MB        | 10.4 GT/s  | 24         | 2.3 GHz                  | 3.90 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8260L           | CascadeLake SP | QRC2   | B0       | 33MB        | 10.4 GT/s  | 24         | 2.3 GHz                  | 3.90 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8256            | CascadeLake SP | QRAP   | B0       | 16.5MB      | 10.4 GT/s  | 4          | 3.8 GHz                  | 3.90 GHz            | 105W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8253            | CascadeLake SP | QRAN   | B0       | 22MB        | 10.4 GT/s  | 16         | 2.2 GHz                  | 3.00 GHz            | 125W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6252                | CascadeLake SP | QRAL   | B0       | 33MB        | 10.4 GT/s  | 24         | 2.1 GHz                  | 3.70 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6248                | CascadeLake SP | QRAK   | B0       | 27.5MB      | 10.4 GT/s  | 20         | 2.5 GHz                  | 3.90 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6244                | CascadeLake SP | QRAJ   | B0       | 24.75MB     | 10.4 GT/s  | 8          | 3.6 GHz                  | 4.40 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6242                | CascadeLake SP | QRAH   | B0       | 22MB        | 10.4 GT/s  | 16         | 2.8 GHz                  | 3.90 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6240Y               | CascadeLake SP | QRBX   | B0       | 24.75MB     | 10.4 GT/s  | 18         | 2.6 GHz                  | 3.90 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6240                | CascadeLake SP | QRAG   | B0       | 24.75MB     | 10.4 GT/s  | 18         | 2.6 GHz                  | 3.90 GHz            | 150W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6238T               | CascadeLake SP | QRBW   | B0       | 30.25MB     | 10.4 GT/s  | 22         | 1.9 GHz                  | 3.70 GHz            | 125W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 6230                | CascadeLake SP | QRAD   | B0       | 27.5MB      | 10.4 GT/s  | 20         | 2.1 GHz                  | 3.90 GHz            | 125W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 5218                | CascadeLake SP | QRA9   | B0       | 22MB        | 10.4 GT/s  | 16         | 2.3 GHz                  | 3.90 GHz            | 125W  | DDR4-2666    |  |
| Intel® Xeon® Processor Platinum 8260Y           | CascadeLake SP | QRC1   | B0       | 33MB        | 10.4 GT/s  | 24         | 2.3 GHz                  | 3.90 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Platinum 8260            | CascadeLake SP | QRC3   | B0       | 33MB        | 10.4 GT/s  | 24         | 2.3 GHz                  | 3.90 GHz            | 165W  | DDR4-2933    |  |
| Intel® Xeon® Processor Gold 5220                | CascadeLake SP | QRGH   | L0       | 24.75MB     | 10.4 GT/s  | 18         | 2.2 GHz                  | 3.90 GHz            | 125W  | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 5218N               | CascadeLake SP | QRGD   | L0       | 22MB        | 10.4 GT/s  | 16         | 2.3 GHz                  | 3.70 GHz            | 105W  | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 5218B               | CascadeLake SP | QRGE   | L0       | 22MB        | 10.4 GT/s  | 16         | 2.3 GHz                  | 3.90 GHz            | 125W  | DDR4-2666    |  |
| Intel® Xeon® Processor Gold 5217                | CascadeLake SP | QRGC   | L0       | 11MB        | 10.4 GT/s  | 8          | 3.0 GHz                  | 3.70 GHz            | 115W  | DDR4-2666    |  |

|  |                     |                 |      |                 |           |         |                    |                  |             |           |  |
|--|---------------------|-----------------|------|-----------------|-----------|---------|--------------------|------------------|-------------|-----------|--|
| Intel® Xeon® Processor Gold 5215L                            | CascadeLake SP      | QRGB            | L0   | 13.75MB         | 10.4 GT/s | 10      | 2.5 GHz            | 3.40 GHz         | 85W         | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 5215M                            | CascadeLake SP      | QRGA            | L0   | 13.75MB         | 10.4 GT/s | 10      | 2.5 GHz            | 3.40 GHz         | 85W         | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 5215                             | CascadeLake SP      | QRG9            | L0   | 13.75MB         | 10.4 GT/s | 10      | 2.5 GHz            | 3.40 GHz         | 85W         | DDR4-2666 |  |
| Intel® Xeon® Processor Silver 4216                           | CascadeLake SP      | QRG8            | L0   | 22MB            | 9.6 GT/s  | 16      | 2.1 GHz            | 3.20 GHz         | 100W        | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4215                           | CascadeLake SP      | QRG7            | L0   | 11MB            | 9.6 GT/s  | 8       | 2.5 GHz            | 3.50 GHz         | 85W         | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4214Y                          | CascadeLake SP      | QRHY            | L0   | 16.5MB          | 9.6 GT/s  | 12      | 2.2 GHz            | 3.20 GHz         | 85W         | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4214                           | CascadeLake SP      | QRG6            | L0   | 16.5MB          | 9.6 GT/s  | 12      | 2.2 GHz            | 3.20 GHz         | 85W         | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4210                           | CascadeLake SP      | QRJF            | R0   | 13.75MB         | 9.6 GT/s  | 10      | 2.2 GHz            | 3.20 GHz         | 85W         | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4209T                          | CascadeLake SP      | QRJM            | R0   | 11MB            | 9.6 GT/s  | 8       | 2.2 GHz            | 3.20 GHz         | 70W         | DDR4-2133 |  |
| Intel® Xeon® Processor Silver 4208                           | CascadeLake SP      | QRJG            | R0   | 11MB            | 9.6 GT/s  | 8       | 2.1 GHz            | 3.20 GHz         | 85W         | DDR4-2133 |  |
| Intel® Xeon® Processor Gold 6252N                            | CascadeLake SP      | QSTW            | B1   | 35.75MB         | 10.4 GT/s | 24      | 2.3 GHz            | 3.60 GHz         | 150W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 5218T                            | CascadeLake SP      | QSTT            | B1   | 22MB            | 10.4 GT/s | 16      | 2.1 GHz            | 3.80 GHz         | 105W        | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 6240M                            | CascadeLake SP      | QS25            | B1   | 24.75MB         | 10.4 GT/s | 18      | 2.6 GHz            | 3.90 GHz         | 150W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 5220S                            | CascadeLake SP      | QS1Z            | B1   | 24.75MB         | 10.4 GT/s | 18      | 2.7 GHz            | 3.90 GHz         | 125W        | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 6222V                            | CascadeLake SP      | QS2C            | B1   | 27.5 MB         | 10.4 GT/s | 20      | 1.8 GHz            | 3.60 GHz         | 115W        | DDR4-2400 |  |
| Intel® Xeon® Processor Gold 6238M                            | CascadeLake SP      | QS27            | B1   | 30.25MB         | 10.4 GT/s | 22      | 2.1 GHz            | 3.70 GHz         | 140W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6262V                            | CascadeLake SP      | QS2B            | B1   | 33MB            | 10.4 GT/s | 24      | 1.9 GHz            | 3.60 GHz         | 135W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6234                             | CascadeLake SP      | QS1U            | B1   | 24.75MB         | 10.4 GT/s | 8       | 3.3 GHz            | 4.00 GHz         | 130W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6226                             | CascadeLake SP      | QS1V            | B1   | 19.25MB         | 10.4 GT/s | 12      | 2.7 GHz            | 3.70 GHz         | 125W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6230N                            | CascadeLake SP      | QS1X            | B1   | 27.5MB          | 10.4 GT/s | 20      | 2.3 GHz            | 3.50 GHz         | 125W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 5220T                            | CascadeLake SP      | QS1R            | B1   | 24.75MB         | 10.4 GT/s | 18      | 1.9 GHz            | 3.90 GHz         | 105W        | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 6246                             | CascadeLake SP      | QS1Q            | B1   | 24.75MB         | 10.4 GT/s | 8       | 3.3 GHz            | 4.20 GHz         | 165W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6238                             | CascadeLake SP      | QS1S            | B1   | 30.25MB         | 10.4 GT/s | 22      | 2.1 GHz            | 3.70 GHz         | 140W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6230T                            | CascadeLake SP      | QS1Y            | B1   | 27.5MB          | 10.4 GT/s | 20      | 2.1 GHz            | 3.90 GHz         | 125W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6240L                            | CascadeLake SP      | QS26            | B1   | 24.75MB         | 10.4 GT/s | 18      | 2.6 GHz            | 3.90 GHz         | 150W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6238L                            | CascadeLake SP      | QS28            | B1   | 30.25MB         | 10.4 GT/s | 22      | 2.1 GHz            | 3.70 GHz         | 140W        | DDR4-2933 |  |
| Intel® Xeon® Processor Bronze 3204                           | CascadeLake SP      | QRJK            | R0   | 8.25MB          | 9.6 GT/s  | 6       | 1.90 GHz           | 1.90 GHz         | 85W         | DDR4-2133 |  |
| CascadeLake refresh - Intel® Xeon® Processor Scalable Family |                     |                 |      |                 |           |         |                    |                  |             |           |  |
| Intel® Xeon® Processor Gold 6240R                            | CascadeLake refresh | SRGZ8           | B1   | 35.75MB         | 10.4 GT/s | 24      | 2.4 GHz            | 4.0 GHz          | 165W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6238R                            | CascadeLake refresh | SRGZ9           | B1   | 38.50MB         | 10.4 GT/s | 28      | 2.2 GHz            | 4.0 GHz          | 165W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6230R                            | CascadeLake refresh | SRGZA           | B1   | 35.75MB         | 10.4 GT/s | 26      | 2.1 GHz            | 4.0 GHz          | 150W        | DDR4-2933 |  |
| Intel® Xeon® Processor Gold 6226R                            | CascadeLake refresh | SRGZC           | B1   | 22MB            | 10.4 GT/s | 16      | 2.9 GHz            | 3.9 GHz          | 150W        | DDR4-2933 |  |
| Intel® Xeon® Processor Silver 4215R                          | CascadeLake refresh | SRGZE           | B1   | 11MB            | 10.4 GT/s | 8       | 3.2 GHz            | 4.0 GHz          | 130W        | DDR4-2400 |  |
| Intel® Xeon® Processor Gold 5220R                            | CascadeLake refresh | SRGZP           | B1   | 35.75MB         | 10.4 GT/s | 24      | 2.2 GHz            | 4.0 GHz          | 150W        | DDR4-2666 |  |
| Intel® Xeon® Processor Gold 5218R                            | CascadeLake refresh | SRGZ7           | B1   | 27.50MB         | 10.4 GT/s | 20      | 2.1 GHz            | 4.0 GHz          | 125W        | DDR4-2666 |  |
| Intel® Xeon® Processor Silver 4214R                          | CascadeLake refresh | QSKT            | L1   | 16.5MB          | 9.6 GT/s  | 12      | 2.4 GHz            | 3.5 GHz          | 100W        | DDR4-2400 |  |
| Intel® Xeon® Processor Silver 4210R                          | CascadeLake refresh | QSL1            | R1   | 13.75MB         | 9.6 GT/s  | 10      | 2.4 GHz            | 3.2 GHz          | 100W        | DDR4-2400 |  |
| Intel® Xeon® Processor Bronze 3206R                          | CascadeLake refresh | QSL2            | R1   | 11MB            | 9.6 GT/s  | 8       | 1.9 GHz            | 1.9 GHz          | 85W         | DDR4-2133 |  |
| Montage Jintide® Processor Scalable Family                   |                     |                 |      |                 |           |         |                    |                  |             |           |  |
| Montage Jintide® C24601                                      | Jintide             | SREUN           | H0   | 33MB            | 10.4 GT/s | 24      | 2.1 GHz            | 3.7 GHz          | 150W        | DDR4      |  |
| Montage Jintide® C10201                                      | Jintide             | SREUK           | H0   | 13.75MB         | 9.6 GT/s  | 10      | 2.2 GHz            | 3.0 GHz          | 85W         | DDR4      |  |
| Montage Jintide® C08101                                      | Jintide             | SREUL           | H0   | 11MB            | 9.6 GT/s  | 8       | 2.1 GHz            | 3.0 GHz          | 85W         | DDR4      |  |
| Montage Jintide® C16401                                      | Jintide             | SREUM           | H0   | 22MB            | 10.4 GT/s | 16      | 2.1 GHz            | 3.7 GHz          | 125W        | DDR4      |  |
| Montage Jintide® C12301                                      | Jintide             | SREUH           | H0   | 16.5MB          | 10.4 GT/s | 12      | 2.3 GHz            | 3.2 GHz          | 105W        | DDR4      |  |
| Montage Jintide® C14501                                      | Jintide             | SREUJ           | H0   | 19.25MB         | 10.4 GT/s | 14      | 2.2 GHz            | 3.2 GHz          | 105W        | DDR4      |  |
| Memory   |                     |                 |      |                 |           |         |                    |                  |             |           |  |
| Product Name   | Memory Type         | Module Supplier | Size | Chip Brand      | Rank      | Voltage | Data Transfer Rate | Error Correction | CAS Latency | Pins      |  |
| RDIMM  |                     |                 |      |                 |           |         |                    |                  |             |           |  |
| MTA9ASF1G72PZ-2G6D1QI  | DDR4                | Micron          | 8GB  | Micron          | 1Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| M393A2K43BB1-CTD6Q   | DDR4                | Samsung         | 16GB | Samsung         | 2Rx8      | 1.2V    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| M393A2K40CB2-CTD6Q   | DDR4                | Samsung         | 16GB | Samsung-Montage | 1Rx4      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| M393A2K40BB2-CTD   | DDR4                | Samsung         | 16GB | Samsung         | 1Rx4      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| M393A4K40BB2-CTD   | DDR4                | Samsung         | 32GB | Samsung         | 2Rx4      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| M393A8K40B22-CWD6Q   | DDR4                | Samsung         | 64GB | Samsung         | 252Rx4    | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| CT16G4RFD8266.2G6H1.001                                      | DDR4                | CRUCIAL         | 16GB | Micron          | 2Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| MTA18ASF2G72PDZ-2G6H1QG                                      | DDR4                | Micron          | 16GB | Micron          | 2Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| CT16G4RFD8266.18FD1  | DDR4                | CRUCIAL         | 16GB | Micron          | 2Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| MTA18ASF2G72PDZ-2G6D1  | DDR4                | Micron          | 16GB | Micron          | 2Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| CT16G4RFD8266.2G6D1  | DDR4                | CRUCIAL         | 16GB | Micron          | 2Rx8      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| CT16G4RFS4266.18FD1  | DDR4                | CRUCIAL         | 16GB | Micron          | 1Rx4      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |
| MTA18ASF2G72PZ-2G6D1QI                                       | DDR4                | Micron          | 16GB | Micron          | 1Rx4      | 1.2v    | 2666MHz            | ECC Registered   | 19          | 288-pin   |  |

|                         |      |          |      |                 |  |      |      |         |                |    |         |
|-------------------------|------|----------|------|-----------------|--|------|------|---------|----------------|----|---------|
| CT32G4RFD4266.36FD1     | DDR4 | CRUCIAL  | 32GB | Micron          |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| CT32G4RFD4266.2G6D1.001 | DDR4 | CRUCIAL  | 32GB | Micron          |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| CT32G4RFD4266.2G6H1.001 | DDR4 | CRUCIAL  | 32GB | Micron          |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| MTA36ASF4G72PZ.2G6H1QG  | DDR4 | CRUCIAL  | 32GB | Micron          |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| HMA82GR7AFR4N-VKT3      | DDR4 | SKhynix  | 16GB | Skhynix-Montage |  | 1Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| HMA82GR7AFR4N-VKTF      | DDR4 | SKhynix  | 16GB | Skhynix-IDT     |  | 1Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| HMA82GR7AFR8N-VKT3      | DDR4 | SKhynix  | 16GB | Skhynix-Montage |  | 2Rx8 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| HMA82GR7AFR8N-VKTF      | DDR4 | SKhynix  | 16GB | Skhynix-IDT     |  | 2Rx8 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| HMA84GR7AFR4N-VKT3      | DDR4 | SKhynix  | 32GB | Skhynix-Montage |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| KSM26RD4/32HAI          | DDR4 | Kingston | 32GB | Skhynix-IDT     |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| KSM26RS4/16HAI          | DDR4 | Kingston | 16GB | Skhynix-IDT     |  | 1Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| KSM26RS8/8HAI           | DDR4 | Kingston | 8GB  | Skhynix-IDT     |  | 1Rx8 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| TR432G26D419-VKA        | DDR4 | V-color  | 32GB | Skhynix-Inphi   |  | 2Rx4 | 1.2v | 2666MHz | ECC Registered | 19 | 288-pin |
| M393A2K40CB2-CVFBO      | DDR4 | Samsung  | 16GB | Samsung-IDT     |  | 1Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| M393A2K43CB2-CVFBO      | DDR4 | Samsung  | 16GB | Samsung-IDT     |  | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| M393A4K40CB2-CVFBO      | DDR4 | Samsung  | 32GB | Samsung-IDT     |  | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT8G4RFS8293.9FE1       | DDR4 | CRUCIAL  | 8GB  | Micron          |  | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT8G4RFS8293-2G9E1.001  | DDR4 | CRUCIAL  | 8GB  | Micron          |  | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA9ASF1G72PZ.2G9E1VG   | DDR4 | Micron   | 8GB  | Micron-IDT      |  | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA9ASF1G72PZ.2G9E1UG   | DDR4 | Micron   | 8GB  | Micron-Rambus   |  | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA9ASF1G72PZ.2G9E1TI   | DDR4 | Micron   | 8GB  | Micron-Montage  |  | 1Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT16G4RFD8293.18FE1     | DDR4 | CRUCIAL  | 16GB | Micron          |  | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT16G4RFD8293.2G9E1.001 | DDR4 | CRUCIAL  | 16GB | Micron          |  | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA18ASF2G72PDZ.2G9E1UG | DDR4 | Micron   | 16GB | Micron-Rambus   |  | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA18ASF2G72PDZ.2G9E1VG | DDR4 | Micron   | 16GB | Micron-IDT      |  | 2Rx8 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT16G4RFS4293.18FE1     | DDR4 | CRUCIAL  | 16GB | Micron          |  | 1Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| CT16G4RFS4293-2G9E1.001 | DDR4 | CRUCIAL  | 16GB | Micron          |  | 1Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA18ASF2G72PZ.2G9E1TK  | DDR4 | Micron   | 16GB | Micron-Montage  |  | 1Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |
| MTA18ASF2G72PZ.2G9E1VG  | DDR4 | Micron   | 16GB | Micron-IDT      |  | 1Rx4 | 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 |
| HMA81GR7CJR8N-WM TG     | DDR4 | SKhynix  | 8GB  | SKhynix-IDT     |  | 1Rx8 | 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 |
| HMA84GR7CJR4N-WM TG     | DDR4 | SKhynix  | 32GB | SKhynix-IDT     |  | 2Rx4 | 1.2v | 2933MHz | ECC Registered | 21 | 288-pin |

|   |             |                 |             |                      |          |                 |                                      |                  |             |            |
|---|-------------|-----------------|-------------|----------------------|----------|-----------------|--------------------------------------|------------------|-------------|------------|
| KSM29RD8/16MEI  | DDR4        | Kingston        | 16GB        | Micron-IDT           | 2Rx8     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| KSM29RD4/32MEI  | DDR4        | Kingston        | 32GB        | Micron-IDT           | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| NT16GA72D8PBX3P-IX  | DDR4        | Nanya           | 16GB        | Nanya-IDT            | 2Rx8     | 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    |
| M393A2K40DB2-CVFBQ  | DDR4        | Samsung         | 16GB        | Samsung-IDT          | 1Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| M393A4K40DB2-CVFBQ  | DDR4        | Samsung         | 32GB        | Samsung-IDT          | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA18ASF2G72PDZ-2G9J3VI   | DDR4        | Micron          | 16GB        | Micron-IDT           | 2Rx8     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA18ASF2G72PDZ-2G9J3TI   | DDR4        | Micron          | 16GB        | Micron-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    |
| M393A2K43DB2-CVFBQ  | DDR4        | Samsung         | 16GB        | Samsung-IDT          | 2Rx8     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA36ASF4G72PZ-2G9J3TI  | DDR4        | Micron          | 32GB        | Micron-Montage       | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| KSM29RD8/16HDR  | DDR4        | Kingston        | 16GB        | SKhynix-Rambus       | 2Rx8     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| <b>RDIMM (Only support CascadeLake)</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| M393A8G40MB2-CTD7Q  | DDR4        | Samsung         | 64GB        | Samsung-IDT          | 2Rx4     | 1.2v            | 2666MHz                              | ECC Registered   | 19          | 288-pin    |
| M393A8G40MB2-CVFBY  | DDR4        | Samsung         | 64GB        | Samsung-IDT          | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| CT64G4RFD4293-2G9B1.001   | DDR4        | CRUCIAL         | 64GB        | Micron-IDT           | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA36ASF8G72PZ-2G9B1VI  | DDR4        | Micron          | 64GB        | Micron-IDT           | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| HMAA8GR7MJR4N-WM T4   | DDR4        | SKhynix         | 64GB        | SKhynix-Montage      | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| CT64G4RFD4293-2G9B2.001   | DDR4        | Crucial         | 64GB        | Micron-IDT           | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA36ASF8G72PZ-2G9B2VI  | DDR4        | Crucial         | 64GB        | Micron-IDT           | 2Rx4     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| MTA36ASF8G72PZ-2G9E1TI  | DDR4        | Micron          | 64GB        | Micron-Montage       | 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    |
| MTA18ASF4G72PDZ-2G9E1TI   | DDR4        | Micron          | 32GB        | Micron-Montage       | 2Rx8     | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| <b>DDR4 Memory ECC LRDIMM</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| <b>LRDIMM</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| Product Name  | Memory Type | Module Supplier | Size        | Chip Brand           | Rank     | Voltage         | Data Transfer Rate                   | Error Correction | CAS Latency | Pins       |
| HMAA8GL7AMR4N-VKTF  | DDR4        | SKhynix         | 64GB        | SKhynix              | 4DRx4    | 1.2v            | 2666MHz                              | ECC Unbuffer     | 17          | 288-pin    |
| M386A8K40BM2-CTD7Q  | DDR4        | Samsung         | 64GB        | Samsung              | 4DRx4    | 1.2v            | 2666MHz                              | ECC Registered   | 17          | 288-pin    |
| CT32G4LFD424A-2G3B1   | DDR4        | CRUCIAL         | 32GB        | Micron               | 2Rx4     | 1.2v            | 2400MHz                              | ECC Registered   | 17          | 288-pin    |
| M386A8K40CM2-CVFBY  | DDR4        | Samsung         | 64GB        | Samsung-IDT          | 4DRx4    | 1.2v            | 2933MHz                              | ECC Registered   | 21          | 288-pin    |
| <b>Intel Optane™ Persistent Memory 100 Series (Apache PASS) Due to thermal limitaiton, please mark as orange color if test pass</b> |             |                 |             |                      |          |                 |                                      |                  |             |            |
| Product Name  | Memory Type | Module Supplier | Size        | TDP                  | Pins     | Note            |                                      |                  |             |            |
| NMA1XB0128G25E 3DXP PAK 1   | DDR-T       | Intel           | 128GB       | 15W                  | 288-pin  |                 |                                      |                  |             |            |
| NMA1XB0256G0S QOXXD   | DDR-T       | Intel           | 256GB       | 18W                  | 288-pin  |                 |                                      |                  |             |            |
| NMA1XB0512G0SE 3DXP PAK   | DDR-T       | Intel           | 512GB       | 18W                  | 288-pin  |                 |                                      |                  |             |            |
| <b>Seagate HDD (SAS HDD may need RAID Card support)</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| Product Name  | Type        | Vendor          | Form Factor | Format               | Capacity | Interface Speed | Series                               | Cache            | RPM         | Encryption |
| <b>Seagate Enterprise Capacity 2.5 HDD</b>  |             |                 |             |                      |          |                 |                                      |                  |             |            |
| ST2000NX0403  | SATA        | Seagate         | 2.5"        | 512n                 | 2TB      | 6Gb/s           | Enterprise Capacity V.3              | 128MB            | 7200        | N/A        |
| ST1000NX0423  | SATA        | Seagate         | 2.5"        | 512n                 | 1TB      | 6Gb/s           | Enterprise Capacity V.3              | 128MB            | 7200        | N/A        |
| ST1000NX0313  | SATA        | Seagate         | 2.5"        | 512e                 | 1TB      | 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        |
| <b>SATA/SAS SSD</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| Product Name  | Type        | Vendor          | Form Factor | Interface            | Capacity | Interface Speed | FW                                   | Note             |             |            |
| <b>SATA/SAS SSD</b>   |             |                 |             |                      |          |                 |                                      |                  |             |            |
| SDLF1CRR-019T-1HA1  | SSD         | SanDisk         | 2.5"        | SATA                 | 1.92TB   | 6Gb/s           | ZFR04                                |                  |             |            |
| SRE100-960G00210000   | SSD         | Phison          | 2.5"        | SATA                 | 960GB    | 6Gb/s           |                                      |                  |             |            |
| SRE100-480G00210000   | SSD         | Phison          | 2.5"        | SATA                 | 480GB    | 6Gb/s           |                                      |                  |             |            |
| ASR1100SS-240GT-B   | SSD         | ADATA           | 2.5"        | SATA                 | 240GB    | 6Gb/s           |                                      |                  |             |            |
| SED500M/3840G DC500M Series   | SSD         | Kingston        | 2.5"        | SATA                 | 3.84TB   | 6Gb/s           |                                      |                  |             |            |

|   |   |                           |                |  |                         |                                  |                       |                               |
|---|---|---------------------------|----------------|--|-------------------------|----------------------------------|-----------------------|-------------------------------|
| SEDC500M/1920G DC500M Series                | SSD                                     | Kingston                  | 2.5"           | SATA                                       | 1.92TB                  | 6Gb/s                            |                       |                               |
| SEDC500M/960G DC500M Series                 | SSD                                     | Kingston                  | 2.5"           | SATA                                       | 960GB                   | 6Gb/s                            |                       |                               |
| SEDC500M/480G DC500M Series                 | SSD                                     | Kingston                  | 2.5"           | SATA                                       | 480GB                   | 6Gb/s                            |                       |                               |
| SKH61RSE960G                                | SSD                                     | Toshiba                   | 2.5"           | SATA                                       | 960GB                   | 6Gb/s                            |                       |                               |
| MZ-7LH1T9NE 883 DCT Series                  | SSD                                     | Samsung                   | 2.5"           | SATA                                       | 1.92TB                  | 6Gb/s                            | HXT7404Q              |                               |
| 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                            |                       |                               |
| SSB240GTLGG-D2-SME520GBT ESM1220 Series     | SSD                                     | Phison                    | 2.5"           | SATA                                       | 240GB                   | 6Gb/s                            |                       |                               |
| SSB480GTLGG-D2-SME520GBT ESM1220 Series     | SSD                                     | Phison                    | 2.5"           | SATA                                       | 480GB                   | 6Gb/s                            |                       |                               |
| SSB960GTLGG-D2-SME520GBT ESM1220 Series     | SSD                                     | Phison                    | 2.5"           | SATA                                       | 960GB                   | 6Gb/s                            |                       |                               |
| SSB1K9GTLGG-D2-SME520GBT ESM1220 Series     | SSD                                     | Phison                    | 2.5"           | SATA                                       | 1.92TB                  | 6Gb/s                            |                       |                               |
| <b>PCIe SSD</b>                             |   |                           |                |  |                         |                                  |                       |                               |
| Product Name                                | Type                                    | Vendor                    | Form Factor    | Interface                                  | Capacity                | Interface Speed                  | Note                  |                               |
| PCIe SSD                                    |   |                           |                |  |                         |                                  |                       |                               |
| SSDPEDMD400G4                               | PCIe                                    | Intel                     | PCI-E 3.0      | PCIe(NVMe)                                 | 400GB                   | -                                |                       |                               |
| SSDPEDME400G4                               | PCIe                                    | Intel                     | PCI-E 3.0      | PCIe(NVMe)                                 | 400GB                   | -                                |                       |                               |
| HUAWEI ES3600C V2 PCIe Gen 3.0 x 4 3.2TB    | PCIe                                    | HUAWEI                    | PCI-E 3.0      | PCIe(NVMe)                                 | 3.2TB                   | -                                |                       |                               |
| Techman XC100C5C-1600 1600GB                | PCIe                                    | Techman                   | PCI-E 3.0      | PCIe(NVMe)                                 | 1.6TB                   | -                                |                       |                               |
| Netlist N1951 E3 NS1951AH33T2 Gen3 x8 3.2TB | PCIe                                    | Netlist                   | PCI-E 3.0      | PCIe(NVMe)                                 | 3.2TB                   | -                                |                       |                               |
| <b>U.2</b>                                  |   |                           |                |  |                         |                                  |                       |                               |
| Product Name                                | Type                                    | Vendor                    | Form Factor    | Interface                                  | Capacity                | Interface Speed                  | Note                  |                               |
| U.2 (VROC support)                          |   |                           |                |  |                         |                                  |                       |                               |
| SSDPE2MD800G4 P3700Series                   | U.2                                     | Intel                     | 2.5"           | SATA (NVMe)                                | 800GB                   | -                                |                       |                               |
| U.2   |   |                           |                |  |                         |                                  |                       |                               |
| SSDPE2MD800G4 P3700Series                   | U.2                                     | Intel                     | 2.5"           | SATA (NVMe)                                | 800GB                   | -                                |                       |                               |
| MTFDHAL3T2MCE                               | U.2                                     | Micron                    | 2.5"           | SATA (NVMe)                                | 3.2TB                   | -                                |                       |                               |
| XC100E55                                    | U.2                                     | Techman                   | 2.5"           | SATA (NVMe)                                | 1.6TB                   | -                                |                       |                               |
| NS1951UF13T8 Netlist N1951 D2 Series        | U.2                                     | Netlist                   | 2.5"           | SFF8639(NVMe)                              | 3.84TB                  | Gen3 x4                          |                       |                               |
| NS1551U711T9 Netlist N1551 D2 Series        | U.2                                     | Netlist                   | 2.5"           | SFF8639(NVMe)                              | 1.92TB                  | Gen3 x4                          |                       |                               |
| P34UTM-03T2U-ST-DETA D5457 Series           | U.2                                     | DERA                      | 2.5"           | SFF8639(NVMe)                              | 3.2TB                   | Gen3 x4                          |                       |                               |
| KCD51LUG960G CDS Series                     | U.2                                     | Toshiba                   | 2.5"           | SFF8639(NVMe)                              | 960GB                   | Gen3 x4                          |                       |                               |
| PS5012-E12                                  | U.2                                     | PHISON                    | 2.5"           | SFF8639(NVMe)                              | 1.92TB                  | Gen3 x4                          |                       |                               |
| MZ-QLB1T9N 883 DCT Series                   | U.2                                     | Samsung                   | 2.5"           | SFF8639(NVMe)                              | 1.92TB                  | Gen3 x4                          |                       |                               |
| MTFDHBE3T8TDF 7300 Pro Series               | U.2                                     | Micron                    | 2.5"           | SFF8639(NVMe)                              | 3.84TB                  | Gen3 x4                          |                       |                               |
| PWFX100 3.2TB                               | U.2                                     | PHISON                    | 2.5"           | SFF8639(NVMe)                              | 3.2TB                   | PCIe Gen3 x4                     |                       |                               |
| MTFDHBE1T6TDG 7300 Max Series               | U.2                                     | Micron                    | 2.5"           | SFF8639(NVMe)                              | 1.6TB                   | Gen3 x4                          |                       | MTFDHBE1T6TDG-1AW1ZABYY       |
| MTFDHBE960TDF 7300 Pro Series               | U.2                                     | Micron                    | 2.5"           | SFF8639(NVMe)                              | 960GB                   | Gen3 x4                          |                       | MTFDHBE960TDF-1AW4ZABYY       |
| <b>M.2 Expansion PCIe Card</b>              |   |                           |                |  |                         |                                  |                       |                               |
| Product Name                                | Type                                    | Vendor                    | Form Factor    | Interface                                  | Max. Channels           | Interface Speed                  | Note                  |                               |
| CMT4032                                     | PCIe                                    | Gigabyte                  | 22110          | PCIe(NVMe)                                 | 2                       | Gen3 x 8bus                      |                       |                               |
| CMT4034                                     | PCIe                                    | Gigabyte                  | 22110          | PCIe(NVMe)                                 | 4                       | Gen3 x 16bus                     |                       |                               |
| <b>SATA DOM</b>                             |   |                           |                |  |                         |                                  |                       |                               |
| Product Name                                | Type                                    | Vendor                    | Capacity       | Flash Type                                 | Max. Channels           | Max. Power Consumption           | Note                  |                               |
| SATA III                                    |   |                           |                |  |                         |                                  |                       |                               |
| Innodisk SATADOM-SL 3ME4 DESSL-64GM41BC1SCB | Vertical                                | INNODISK                  | 64GB           | MLC  | 1                       | 0.734 W                          |                       |                               |
| Innodisk SATADOM-SH 3ME4 DESSH-64GM41BC1SCB | Horizontal                              | INNODISK                  | 64GB           | MLC  | 2                       | 1.27 W                           |                       |                               |
| <b>GPGPU Card (GPGPU server only)</b>       |   |                           |                |  |                         |                                  |                       |                               |
| Product Name                                | Processor Cores                         | Memory Bandwidth (GB/sec) | OpenGL         | Microsoft DirectX                          | Graphics Card Power (W) | NVIDIA SLI / AMD CrossFire Ready | Note                  |                               |
| NVIDIA Tesla                                |   |                           |                |  |                         |                                  |                       |                               |
| Tesla V100 (Volta)                          | 5120                                    | 900 GB/s                  | -              | -  | 250 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| P100 (Pascal)                               | 3584                                    | 732 GB/s                  | -              | -  | 250 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| P40 (Pascal)                                | 3840                                    | 346 GB/s                  | -              | -  | 250 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| P4 (Pascal)                                 | 2560                                    | 192 GB/s                  | -              | -  | 50/70 W                 | -                                |                       | (Maximum support 2pcs GPGPU ) |
| Tesla M60 (Maxwell)                         | 4096                                    | 320 GB/s                  | -              | -  | 300 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| Tesla M40 (Maxwell)                         | 2560 (640/GPU)                          | -                         | -              | -  | 250 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| Tesla M10 (Maxwell)                         | 2560 (640/GPU)                          | -                         | -              | -  | 225 W                   | -                                |                       | (Maximum support 2pcs GPGPU ) |
| <b>RAID Cards</b>                           |   |                           |                |  |                         |                                  |                       |                               |
| Model                                       | RAID-on-Chip Controller                 | Host Bus Type             | Internal Ports | Internal Connectors                        | External Ports          | External Connectors              | Data Transfer Rates   | Note                          |
| GIGABYTE Storage Cards                      |   |                           |                |  |                         |                                  |                       |                               |
| CRA3338                                     | LSI SAS 3008                            | PCIe-x8 Gen3 x8 bus       | 8              | 2 x Mini-SAS HD for 8x SAS                 | -                       | -                                | 12Gb/s ports          |                               |
| CSA3548                                     | LSI SAS 3008                            | PCIe-x8 Gen3 x8 bus       | 8              | -  | 4                       | 2 x external Mini-SAS HD SFF8644 | 12Gb/s ports          |                               |
| CRA4548                                     | LSI SAS 3108                            | PCIe-x8 Gen3 x8 bus       | 4              | 1 x internal Mini-SAS HD SFF8643           | 8                       | 1 x external Mini-SAS HD SFF8644 | 12Gb/s ports          |                               |
| CRA4448                                     | LSI SAS 3108                            | PCIe-x8 Gen3 x8 bus       | 8              | 2 x internal Mini-SAS HD SFF8643           | -                       | -                                | 12Gb/s ports          |                               |
| CRAO438                                     | LSI SAS 3108                            | OCPC PCIe-x8 Gen3 x8 bus  | 8              | 2 x SlimSAS ports                          | -                       | -                                | 12Gb/s ports          |                               |
| CRAO338                                     | LSI SAS 3008                            | OCPC PCIe-x8 Gen3 x8 bus  | 8              | 2 x SlimSAS ports                          | -                       | -                                | 12Gb/s ports          |                               |
| CRAO358                                     | LSI SAS 3008                            | OCPC PCIe-x8 Gen3 x8 bus  | 4              | 1 x internal SlimSAS port                  | 1                       | 1 x OCuLink port                 | 12Gb/s ports          |                               |
| CRAO558                                     | LSI SAS 3108                            | OCPC PCIe-x8 Gen3 x8 bus  | 4              | 1 x internal SlimSAS port                  | 1                       | 1 x OCuLink port                 | 12Gb/s ports          |                               |
| CRA4648                                     | LSI SAS3108                             | PCIe x8 slot (3.0 x8 bus) | 8              | 2 x internal Mini-SAS HD SFF8643           | 8                       | -                                | 12Gb/s ports          |                               |
| LSI RAID Controller Cards                   |   |                           |                |  |                         |                                  |                       |                               |
| MegaRAID SAS 9361-8i                        | LSISAS3108 dual core RAID on Chip (ROC) | x8 lane PCI Express® 3.0  | 8              | 2 x HD Mini-SAS SFF8643 (Horizontal mount) | -                       | -                                | Up to 12Gb/s per port |                               |
| Microsemi RAID Cards                        |   |                           |                |  |                         |                                  |                       |                               |
| SmartRAID 3154-8i                           | PM8204                                  | 8-Lane PCIe Gen3          | 8              | 2 x Internal, SFF-8643                     | -                       | -                                | 12 Gb/s per port      |                               |

|  |           |                           |            |                        |                  |   |                  |  |
|--|-----------|---------------------------|------------|------------------------|------------------|---|------------------|--|
| SmartRAID 3154-16i                                 | PM8236    | 8-Lane PCIe Gen3          | 16         | 4 x Internal, SFF-8643 | -                | -   | 12 Gb/s per port |  |
| Microsemi Host Bus Adapters                        |           |                           |            |                        |                  |   |                  |  |
| SmartHBA 2100-8i                                   | PM8222    | 8-Lane PCIe Gen3          | 8          | 2 x Internal, SFF-8643 | -                | -   | 12 Gb/s per port |  |
| HBA 1100-16i                                       | PM8242    | 8-Lane PCIe Gen3          | 16         | 4 x Internal, SFF-8643 | -                | -   | 12 Gb/s per port |  |
| HBA 1100-24i                                       | PM8238    | 8-Lane PCIe Gen3          | 24         | 6 x Internal, SFF-8643 | -                | -   | 12 Gb/s per port |  |
| <b>LAN Cards</b>                                   |           |                           |            |                        |                  |   |                  |  |
| Product Name                                       | Connector | System Interface Type     | # of Ports | System Interface Type  | Data rate        | Note  |                  |  |
| GIGABYTE LAN Cards                                 |           |                           |            |                        |                  |   |                  |  |
| CLN0222  | RJ-45     | OCPC PCIe Gen3 x4         |            | Dual                   | 10Gb/s per port  | INTEL X550-AT2                              |                  |  |
| CLN0832  | SFP+      | OCPC PCIe x8 Gen2 x8      |            | Dual                   | 10Gb/s per port  | INTEL 82599ES                               |                  |  |
| CLN0Q42  | SFP28     | OCPC PCIe x8              |            | Dual                   | 25Gb/s per port  | Ologic (Cavium) QL41401-A2G Support OCP 2.0 |                  |  |
| CLN4121  | RJ-45     | PCIe x8 Gen3 x4           |            | Single                 | 10Gb/s per port  | INTEL X550-AT                               |                  |  |
| CLN4831  | SFP+      | PCIe x8 Gen2 x8           |            | Single                 | 10Gb/s per port  | INTEL 82599EN                               |                  |  |
| CLN4832  | SFP+      | PCIe x8 Gen2 x8           |            | Dual                   | 10Gb/s per port  | INTEL 82599ES                               |                  |  |
| CLN4522  | RJ-45     | PCIe x8 Gen2 x8           |            | Dual                   | 10Gb/s per port  | INTEL X540                                  |                  |  |
| CLN4751  | QSFP+     | PCIe x8 Gen3 x8           |            | Single                 | 40Gb/s per port  | INTEL XL710                                 |                  |  |
| CLN4752  | QSFP+     | PCIe x8 Gen3 x8           |            | Dual                   | 40Gb/s per port  | INTEL XL710                                 |                  |  |
| CLN4222  | RJ-45     | PCIe x8 Gen3 x4           |            | Dual                   | 10Gb/s per port  | INTEL X550-AT2                              |                  |  |
| CLN4224  | RJ-45     | PCIe x8 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                         |                  |  |
| GC-MNXE21  | SFP+      | PCIe x8 Gen3 x8           |            | Dual                   | 10Gb/s per port  | Mellanox ConnectX-3                         |                  |  |
| GC-MLBZ1   | SFP+      | PCIe x8 Gen2 x8           |            | Dual                   | 10Gb/s per port  | Broadcom BCM57810S                          |                  |  |
| CLN4312  | RJ-45     | PCIe x4 Gen2 x4           |            | Dual                   | 1Gb/s per port   | INTEL I350-AM2                              |                  |  |
| CLN4314  | RJ-45     | PCIe x4 Gen2 x4           |            | Quad                   | 1Gb/s per port   | INTEL I350-AM4                              |                  |  |
| Intel_10GbE  |           |                           |            |                        |                  |   |                  |  |
| Intel® Ethernet Converged Network Adapter X550-T2  | RJ-45     | PCIe v3.0 (8.0 GT/s)      |            | Dual                   | 10Gb/s per port  |   |                  |  |
| Intel® Ethernet Converged Network Adapter X710-DA4 | SFP+      | PCIe v3.0 (8.0 GT/s)      |            | Quad                   | 10Gb/s per port  |   |                  |  |
| Intel® Ethernet Converged Network Adapter X520-DA2 | SFP+      | PCIe v2.0 (5.0GT/s)       |            | Dual                   | 10Gb/s per port  |   |                  |  |
| Intel_25GbE  |           |                           |            |                        |                  |   |                  |  |
| Intel® Ethernet Network Adapter XXV710-DA2 for OCP | SFP28     | OCPC PCIe v3.0 (8.0 GT/s) |            | Dual                   | 25Gb/s per port  |   |                  |  |
| Mellanox ConnectX                                  |           |                           |            |                        |                  |   |                  |  |
| MCX555A-EGAT                                       | QSFP28    | PCIe 3.0 x16              |            | Single                 | 100Gb/s per port | Mellanox ConnectX-5 VPI (InfiniBand)        |                  |  |
| MCX516A-CCAT                                       | QSFP28    | PCIe Gen3 x16             |            | Dual                   | 100Gb/s per port | Mellanox ConnectX-5 EN                      |                  |  |
| MCX515A-CCAT                                       | QSFP28    | PCIe Gen3 x16             |            | Single                 | 100Gb/s per port | Mellanox ConnectX-5 EN                      |                  |  |
| MCX455A-EGAT                                       | QSFP28    | PCIe Gen3 x16             |            | Single                 | 100Gb/s per port | Mellanox ConnectX-4 VPI (InfiniBand)        |                  |  |
| MCX516A-GCAT                                       | QSFP28    | PCIe Gen3 x16             |            | Dual                   | 50Gb/s per port  | Mellanox ConnectX-5 EN                      |                  |  |
| MCX4421A-ACON                                      | SFP28     | OCPC PCIe Gen3 x8         |            | Dual                   | 25Gb/s per port  | Mellanox ConnectX-4 Lx EN / Support OCP 2.0 |                  |  |
| MCX4121A-ACAT                                      | SFP28     | PCIe Gen3 x8              |            | Dual                   | 25Gb/s per port  | Mellanox ConnectX-4 Lx EN                   |                  |  |
| Solarflare Onload Server Adapters                  |           |                           |            |                        |                  |   |                  |  |
| SFN8522-PLUS                                       | QSFP+     | PCIe 3.1 x8               |            | Dual                   | 10Gb/s per port  |   |                  |  |
| SFN8522-ScaleOut Onload                            | QSFP+     | PCIe 3.1 x8               |            | Dual                   | 10Gb/s per port  |   |                  |  |
| Ologic LAN Adapters                                |           |                           |            |                        |                  |   |                  |  |
| QL45611HLCU  | QSFP28    | PCIe x16 Gen3 x16         |            | Single                 | 100Gb/s per port |   |                  |  |
| QLF3442-CU-CK                                      | SFP+      | PCIe x8 Gen3 x8           |            | Dual                   | 10Gb/s per port  |   |                  |  |
| QLF3442-RJ-CK                                      | RJ-45     | PCIe x8 Gen3 x8           |            | Dual                   | 10Gb/s per port  |   |                  |  |
| QL45212HLCU-CK                                     | SFP28     | PCIe x8 Gen3 x8           |            | Dual                   | 25Gb/s per port  |   |                  |  |
| QL45412HLCU-CK                                     | QSFP+     | PCIe x16 Gen3 x16         |            | Dual                   | 40Gb/s per port  |   |                  |  |
| QL41212HLCU-SP                                     | SFP28     | PCIe x8 Gen3 x8           |            | Dual                   | 25Gb/s per port  |   |                  |  |
| QL41132HLCU-SP                                     | SFP28     | PCIe x8 Gen3 x8           |            | Dual                   | 10Gb/s per port  |   |                  |  |
| QL41232HOCU  | SFP28     | OCPC PCIe x8 Gen3 x8      |            | Dual                   | 25Gb/s per port  | Support OCP 2.0                             |                  |  |
| Broadcom (Emulex) Ethernet Networking Adapters     |           |                           |            |                        |                  |   |                  |  |
| MSIP-REM-BCM-957414M4142                           | SFP+      | OCPC PCIe 3.0 x8          |            | Dual                   | 25Gb/s per port  | with RDMA / Support OCP 2.0 type1           |                  |  |
| Broadcom FC Host Bus Adapter                       |           |                           |            |                        |                  |   |                  |  |
| LPe32002-M2  | SFP+      | PCIe 3.0 x8               |            | Dual                   | 32Gb/s per port  | XE501 controller                            |                  |  |
| Intel Omni-Path Host Fabric                        |           |                           |            |                        |                  |   |                  |  |
| Intel® Omni-Path Host Fabric Adapters 100HFA016LS  | QSFP28    | PCIe v3.0 x16             |            | Single                 | 100Gb/s per port |   |                  |  |
| <b>USB Device</b>                                  |           |                           |            |                        |                  |   |                  |  |
| Product Name                                       | Type      | Vendor                    | Capacity   | Note                   |                  |   |                  |  |
| USB 3.0  |           |                           |            |                        |                  |   |                  |  |
| PURE CLASSIC X176B1F-WBO/5                         | HDD       | Gigabyte                  | 500G       |                        |                  |   |                  |  |
| NU EBC113  | Blue-ray  | NU                        |            |                        |                  |   |                  |  |
| NU ESW863 8X SLIM                                  | DVD       | NU                        |            |                        |                  |   |                  |  |
| SILICON POWER BLAZE B10 16GB                       | Flash     | SILICON                   | 16G        |                        |                  |   |                  |  |