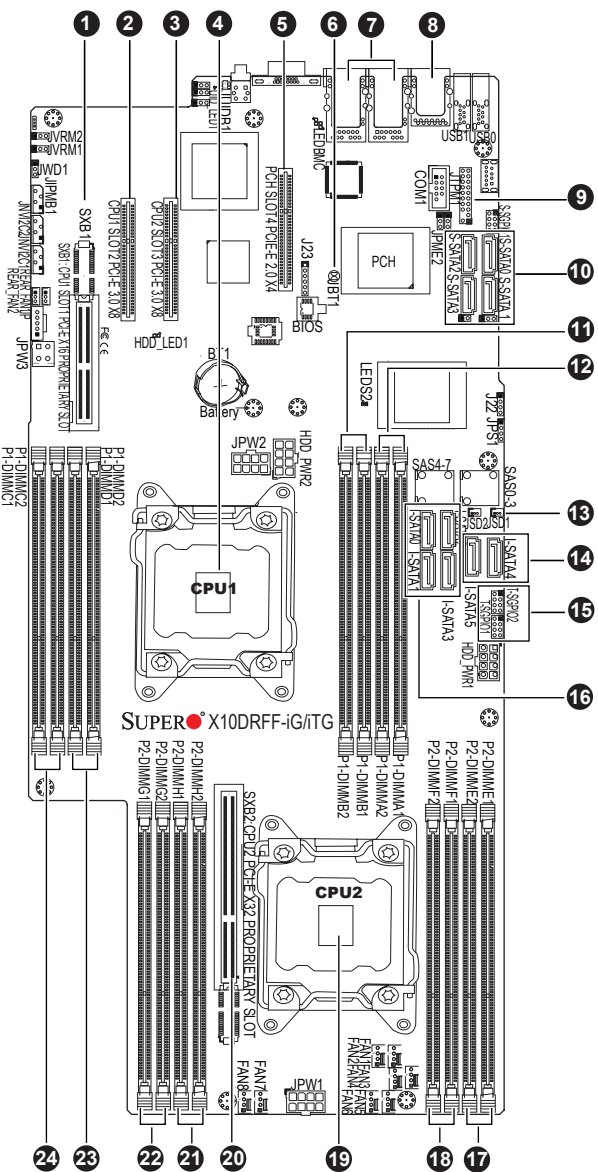


SUPERMICR SuperServer F648G2-FT+/FTPT+ Quick Reference Guide

Board Layout



| No. | Description                                                              |
|-----|--------------------------------------------------------------------------|
| 1   | SBX1: CPU1 Slot1 PCI-E 3.0 x16 Proprietary Slot                          |
| 2   | CPU1 Slot2 PCI-E 3.0 x8                                                  |
| 3   | CPU2 Slot3 PCI-E 3.0 x8                                                  |
| 4   | CPU1 Socket                                                              |
| 5   | PCH Slot4 PCI-E 2.0 x4                                                   |
| 6   | JBT1: CMOS Clear                                                         |
| 7   | 1G_bit LAN ports 1/2 (X10DRFF-iG)<br>10G_bit LAN ports 1/2 (X10DRFF-iTG) |
| 8   | IPMI_LAN1: IPMI dedicated LAN Support                                    |
| 9   | JTPM1: Trusted Platform Module Header                                    |
| 10  | S-SATA 0~3: SATA 3.0 connectors                                          |
| 11  | P1-DIMMB1 / P1-DIMMB2                                                    |
| 12  | P1-DIMMA1 / P1-DIMMA2                                                    |

| No. | Description                                    |
|-----|------------------------------------------------|
| 13  | JSD1 & JSD2: I-SATA4 & I-SATA5 Power Connector |
| 14  | I-SATA4~5: Support SMC1 SuperDOM               |
| 15  | T-SGPIO 1/2: Intel SATA SGPIO                  |
| 16  | I-SATA0~3: Internal SATA 3.0 Ports             |
| 17  | P2-DIMME1 / P2-DIMME2                          |
| 18  | P2-DIMMF1 / P2-DIMMF2                          |
| 19  | CPU2 Socket                                    |
| 20  | SXB2: CPU2 PCI-E x32 Proprietary Slot          |
| 21  | P2-DIMMH1 / P2-DIMMH2                          |
| 22  | P2-DIMMG1 / P2-DIMMG2                          |
| 23  | P1-DIMMD1 / P1-DIMMD2                          |
| 24  | P1-DIMMC1 / P1-DIMMC2                          |

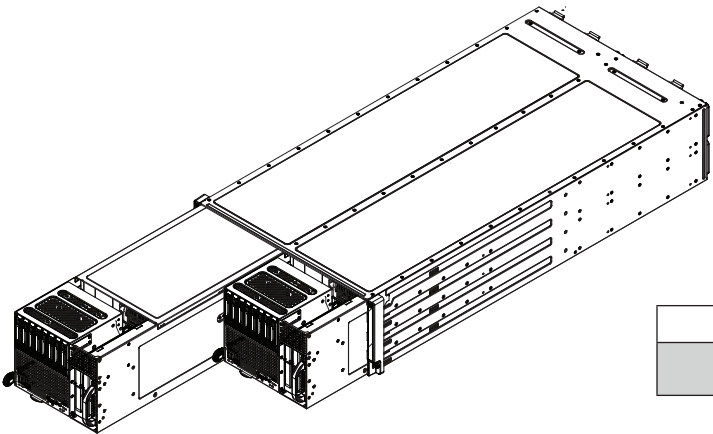
Memory

| Processors and their Corresponding Memory Modules |                            |           |           |           |           |           |           |           |
|---------------------------------------------------|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| CPU#                                              | Corresponding DIMM Modules |           |           |           |           |           |           |           |
| CPU 1                                             | P1-DIMMA1                  | P1-DIMMB1 | P1-DIMMC1 | P1-DIMMD1 | P1-DIMMA2 | P1-DIMMB2 | P1-DIMMC2 | P1-DIMMD2 |
| CPU2                                              | P2-DIMME1                  | P2-DIMMF1 | P2-DIMMG1 | P2-DIMMH1 | P2-DIMME2 | P2-DIMMF2 | P2-DIMMG2 | P2-DIMMH2 |

| Processor and Memory Module Population for Optimal Performance |                                                                                                                                                                                   |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of CPUs+DIMMs                                           | CPU and Memory Population Configuration Table (For memory to work properly, please follow the instructions below.)                                                                |
| 1 CPU & 2 DIMMs                                                | CPU1<br>P1-DIMMA1/P1-DIMMB1                                                                                                                                                       |
| 1 CPU & 4 DIMMs                                                | CPU1<br>P1-DIMMA1/P1-DIMMB1, P1-DIMMC1/P1-DIMMD1                                                                                                                                  |
| 1 CPU & 5~8 DIMMs                                              | CPU1<br>P1-DIMMA1/P1-DIMMB1, P1-DIMMC1/P1-DIMMD1 + any pair of P1-DIMMA2/P1-DIMMB2/P1-DIMMC2/P1-DIMMD2 slots                                                                      |
| 2 CPUs & 4 DIMMs                                               | CPU1 + CPU2<br>P1-DIMMA1/P1-DIMMB1, P2-DIMME1/P2-DIMMF1                                                                                                                           |
| 2 CPUs & 6 DIMMs                                               | CPU1 + CPU2<br>P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMMD1, P2-DIMME1/P2-DIMMF1                                                                                                       |
| 2 CPUs & 8 DIMMs                                               | CPU1 + CPU2<br>P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMMD1, P2-DIMME1/P2-DIMMF1/P2-DIMMG1/P2-DIMMH1                                                                                   |
| 2 CPUs & 9~16 DIMMs                                            | CPU1 + CPU2<br>P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMMD1, P2-DIMME1/P2-DIMMF1/P2-DIMMG1/P2-DIMMH1 + any pair of P1, P2 DIMM slots                                                   |
| 2 CPUs & 16 DIMMs                                              | CPU1 + CPU2<br>P1-DIMMA1/P1-DIMMB1/P1-DIMMC1/P1-DIMMD1, P2-DIMME1/P2-DIMMF1/P2-DIMMG1/P2-DIMMH1, P1-DIMMA2/P1-DIMMB2/P1-DIMMC2/P1-DIMMD2, P2-DIMME2/P2-DIMMF2/P2-DIMMG2/P2-DIMMH2 |

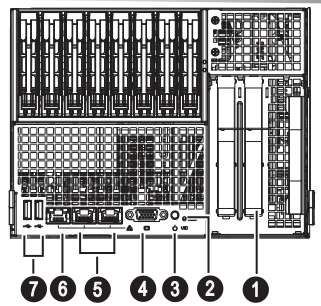
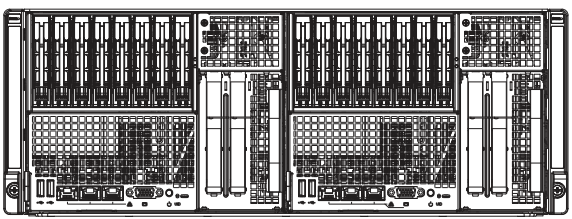
| Populating RDIMM/LRDIMM DDR4 Memory Modules |                               |                    |            |                                                                                |            |       |       |
|---------------------------------------------|-------------------------------|--------------------|------------|--------------------------------------------------------------------------------|------------|-------|-------|
| Type                                        | Ranks Per DIMM and Data Width | DIMM Capacity (GB) |            | Speed (MT/s); Voltage (V); Slots per Channel (SPC) and DIMMs per Channel (DPC) |            |       |       |
|                                             |                               |                    |            | 2 Slots per Channel                                                            |            |       |       |
|                                             |                               |                    |            | 1 DPC                                                                          |            | 2 DPC |       |
|                                             |                               | E5-2600 V3         | E5-2600 V4 | E5-2600 V3                                                                     | E5-2600 V4 |       |       |
|                                             |                               | 4 GB               | 8 GB       | 1.2 V                                                                          | 1.2 V      | 1.2 V | 1.2 V |
| RDIMM                                       | SRx4                          | 8 GB               | 16 GB      | 2133                                                                           | 2400       | 1866  | 2133  |
| RDIMM                                       | SRx8                          | 4 GB               | 8 GB       | 2133                                                                           | 2400       | 1866  | 2133  |
| RDIMM                                       | DRx8                          | 8 GB               | 16 GB      | 2133                                                                           | 2400       | 1866  | 2133  |
| RDIMM                                       | DRx4                          | 16 GB              | 32 GB      | 2133                                                                           | 2400       | 1866  | 2133  |
| LRDIMM                                      | QRx4                          | 32 GB              | 64 GB      | 2133                                                                           | 2400       | 2133  | 2400  |
| LRDIMM 3DS                                  | 8Rx4                          | 64 GB              | 128 GB     | 2133                                                                           | 2400       | 2133  | 2400  |

Nodes and Corresponding Hard Drives



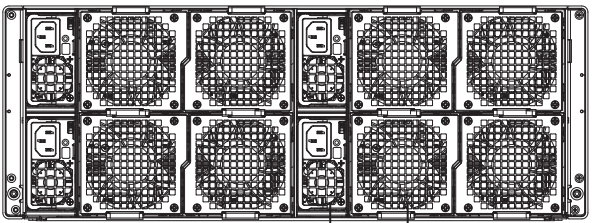
| F442BG Node Locations in the Chassis      |                                           |
|-------------------------------------------|-------------------------------------------|
| Node 1<br>Controls eight 2.5" HDDs, A1-A8 | Node 2<br>Controls eight 2.5" HDDs, B1-B8 |

Front View & Interface



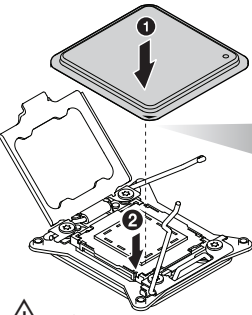
| No. | Description                                    |
|-----|------------------------------------------------|
| 1   | Full-height & half-length PCI-E Expansion Slot |
| 2   | UID Button                                     |
| 3   | Power Button                                   |
| 4   | VGA Port                                       |
| 5   | GbE LAN1/LAN2 Ports                            |
| 6   | Dedicated LAN for IPMI                         |
| 7   | USB 0/1 Ports                                  |

Rear View



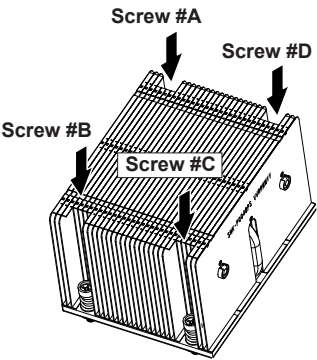
| No. | Description         |
|-----|---------------------|
| 1   | Power Supply Module |
| 2   | Rear Fan            |

CPU Installation



- NOTE:
- Do not bend pin inside socket.
  - Please contact Technical Support for additional information about frequency optimized CPUs and specialized system optimization.

Heatsink Installation



- Place the heatsink on top of the installed CPU.
- Align the four screws to the socket.
- Holding the heatsink in place, screw down as shown (cross pattern, in order: A, C, B, D).
- Note: Only use 6-8 lb/f of torque; otherwise, hand-tighten each screw to avoid damaging the CPU.

Caution

**SAFETY INFORMATION**  
IMPORTANT: See installation instructions and safety warning before connecting system to power supply.  
[http://www.supermicro.com/about/policies/safety\\_information.cfm](http://www.supermicro.com/about/policies/safety_information.cfm)

**WARNING:**  
To reduce risk of electric shock/damage to equipment, disconnect power from server by disconnecting all power cords from electrical outlets.  
If any CPU socket empty, install protective plastic CPU cap

**CAUTION:**  
Always be sure all power supplies for this system have the same power output. If mixed power supplies are installed, the system will not operate.

For more information go to :  
<http://www.supermicro.com/support>

