

Improving energy efficiency in the data center: Endure higher temperatures with confidence with Dell PowerEdge HS5620 servers

compared to Supermicro SYS-621C-TN12R servers

Dell PowerEdge HS5620

✓ No component warnings or failures in the scenarios we tested

Supermicro SYS-621C-TN12R

- ✗ Warnings in each scenario
- ✗ Component failures in three scenarios
- ✗ System failure in two scenarios



Two-hour intensive floating-point workload, similar to an AI/ML inference workload, starting at ambient temperatures of 25°C, shutting air handles off after 15 minutes, and turning air handlers on when temperatures reached 35°C

Continued without failure in 35°C conditions

where the Supermicro SYS-621C-TN12R server failed

✓ Dell server ran with no component-level warnings or failures

✗ Supermicro server OS SSD failed—while consuming more power than the Dell server



Two-hour intensive floating-point workload, similar to an AI/ML inference workload, at ambient temperatures of 25°C

Maintained OS SSD temps 33°C cooler* in 25°C ambient conditions

✓ Dell server displayed no component warnings or failures

✗ Supermicro server BMC warned that OS SSD had reached non-recoverable state



Two-hour intensive floating-point workload, similar to an AI/ML inference workload, starting at ambient temperatures of 25°C, shutting air handles off after 15 minutes, and turning air handlers on when temperatures reached 35°C

Kept OS SSD temps 34°C cooler* during an HVAC malfunction scenario

✓ Dell server OS SSD averaged 48°C

✗ Supermicro server OS SSD averaged 82°C

For more details on the other scenarios and an analysis of each system's cooling design, read the report

<https://facts.pt/gPS09my>