Product Insights
PRIMERGY mono socket server receive Energy Star 1.0 label

High energy efficiency, small carbon footprint and excellent performance values – the combination of these properties has ensured that managed dual socket servers from Fujitsu's PRIMERGY line were among the first to qualify for the 'server ecolabel' the U.S. Environmental Protection Agency (EPA) introduced in spring last year. Starting this January the second wave of Energy Star 1.0-certified machines arrives, this time in the form of mono socket models RX100 S6 and TX150 S7 that just obtained "family certification."

With more and more CIOs trying to transform company data centers into energy-efficient sites, the Energy Star 1.0 label for computer servers arrived just in time to help them make informed purchase decisions. Its success speaks for itself: in the meantime, virtually all leading server manufacturers had a number of machines certified, thus ensuring that even larger transitions to "green IT" may be handled easily. One of the key success factors was that the new rating could not only be obtained for specific system configurations, but also for complete product lines. These so-called "family certificates" are specifically interesting for customers who are looking for all-over infrastructure solutions that involve servers of all sizes. With its long-standing tradition of environmentally compatible products and various audited systems already on the market, it was the logical next step for Fujitsu to put their newest lines of PRIMERGY mono socket (single processor) servers – the RX100 S6 and TX150 S7 – to the tests.

Family certificates

As stated, the idea behind family certificates is to help customers understand which product lines are particularly energy-efficient and therefore suited to build 'green' data centers. By definition, a product family consists of a number of systems built from base components with the same or similar specifications. In short, this means that all 'family members' (possible configurations) must:

- Use the same model motherboard;
- Use the same number of processors from the same model line with identical core counts and power specifications;
- Incorporate same model power supplies, RAM/memory DIMMs, hard drives (HDDs and SSDs), and I/O devices with the same technical and power specifications; the numbers of these latter components may vary.

To further qualify for the Energy Star 1.0 label, product families have to prove that they will in fact cut down power consumption significantly; Fujitsu's new mono socket servers achieve that goal by assembling the following common components under their hoods:

- All CPUs belong either to Intel's Xeon® 3400 or to its Core™ i3 lines of processors that are built according to the new Nehalem or Westmere microarchitectures which provide advanced power saving functions like *Integrated Power Gates* – which reduces energy consumption of single idle CPU cores close to zero – and *Intel Intelligent-Power-Technology* – which ensures that the processor and RAM automatically switch to the most 'economical' power state to get their job done.
- The processors are paired with Intel's low-power 3420 chipset that supports ACPI 3.0b for tighter integration between power management features and the server's operating system.
- Power supply units for the servers work with average CSCI power efficiency ratings of 88 percent (Silver Standard, in PRIMERGY RX100 S6) and 85 or 89 percent (Bronze or Silver Standard, in PRIMERGY TX150 S7).
- Additional features include Smart Power Management settings as well Fujitsu's patented Cool-safe™ Design for improved airflow and cooling, which encompasses honeycomb ventilation, intelligent motherboard design, and special BIOS management functionalities.

Go green in your data center

With these properties combined, the RX100 S6 and the TX150 S7 were capable of 'undercutting' the required Energy Star 1.0 limits; in other words, they work with an even higher efficiency than the strict standard suggests. For each server type, there are two certified product lines (E-Star Families 1 and 2), one equipped with dual-core and one with quad-core CPUs. Each product family was measured in three different configurations in idle mode – minimum, typical, and maximum – that allow for different levels of current consumption. In terms of sheer numbers, the EPA benchmarks showed the following results:

- Dual-core rack servers: Depending on the configuration type, these systems may operate at 55, 63 and 95 watts according to Energy Star 1.0 requirements. Fujitsu's RX100 S6 systems clocked in at 51.1, 56.1 and 71.5 watts respectively.
- Quad-core rack servers: Energy Star requirements for minimum and typical configurations in this category are identical with the ones mentioned above; the maximum configuration limit, however, was pushed to 143 watts. Fujitsu's RX100 S6 mono sockets ended up with values of 52.6, 57.7 and 74.2 watts which nearly match those of their dual-core cousins. Overall, the rack models provided up to 49 percent higher energy efficiency than necessary to obtain the Energy Star label.
- Dual-core tower servers: In this category, the limits for minimum and typical configurations are once again the same as above; systems configured for heavy workloads may use up to 125 watts. The Fujitsu TX150 S7 configurations delivered test results of 44.1, 52.9 and 81.4 watts.
- Quad-core tower servers: In this category, a redundant power supply unit is an admissible part of all configurations, which in turn raises the wattage limits to 65, 93 and 203 watts. Fujitsu's TX150 S7 quad-cores came in at 51.2, 70.7 and 112.6 watts – between 20 and 45 percent better than required.

"These results show that we have successfully rounded out our portfolio of energy-efficient servers," says Marco Rossi, Product Marketing Manager Infrastructure Products at Fujitsu. "Given that the new mono socket servers also come at an attractive price point, this means that our company is continuously paving the way to greener IT environments, now including data centers of small and medium businesses." Further EPA-certified server models from Fujitsu include managed dual-socket PRIMERGY models RX and TX200 / 300 S5 in specific configurations, which were awarded the Energy Star 1.0 label last fall, and entry-level tower servers TX100 S1 and TX120 S2, which had received the Energy Star 5.0 recommendation for small-scale servers in previous years.
For more information, please refer to the links below.

Product website: PRIMERGY RX100 S6
http://de.ts.fujitsu.com/products/standard_servers/rack/primergy_rx100s6.html

Product website: PRIMERGY TX150 S7
http://de.ts.fujitsu.com/products/standard_servers/tower/primergy_tx150s7.html

Website: Energy Efficient PRIMERGY servers
http://ts.fujitsu.com/products/standard_servers/e_efficient.html

Energy Star Key Product Criteria
http://www.energystar.gov/index.cfm?c=ent_servers.pr_crit_enterprise_servers

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