FUJITSU

Fact Sheet
What's so great about Fujitsu and PRIMERGY?

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Fujitsu America Inc., a wholly owned subsidiary of Fujitsu Limited, the third largest IT Company in the world, is pleased to present this overview of our PRIMERGY® server.
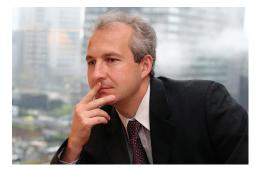
Fujitsu has been in the x86 server market since 1995 as part of a joint venture with Siemens® through the creation of the Fujitsu-Siemens Computers partnership. The joint venture company played a particularly important role as a product development base for x86 servers. The decision to fully consolidate Fujitsu Siemens Computers and unify PRIMERGY server development under the successor company, Fujitsu Technology Solutions, accelerates product development and enables us to provide globally standardized products. Fujitsu made the investment to buy Siemens half of the joint venture as of April 1, 2009.

Drawing on the long Fujitsu heritage and experience of designing rock-solid mainframe class systems, PRIMERGY Servers are designed to meet the toughest performance, scalability, reliability, and availability expectations of users.

The design and engineering goal for PRIMERGY servers is a top-down approach that goes beyond simply boosting the performance of individual platforms by developing elemental technologies that will enhance performance for the entire IT system. More specifically, Fujitsu focuses on the development of technologies for achieving virtualization, energy efficiency, simplifying management and operation;

realizing high-speed interconnections are achievements that will set Fujitsu apart from competitors.

Customers have found PRIMERGY Servers to be a superior investment. With the Fujitsu mainframe heritage, they are designed to be the solution for enterprise computing environments. PRIMERGY Servers will play a significant role in meeting business objectives with:

- **Industry-leading Reliability** - Fujitsu PRIMERGY servers integrate Japanese innovation with German engineering. Our PRIMERGY servers have an average mean time between failures (MTBF) of over 6 years and a life expectancy of over 10 years.
- **Cool-safe® Technology** - Fujitsu PRIMERGY servers use an average of 20% less power than our competitor's servers of a similar model. In fact, the PRIMERGY TX120 model cuts energy costs in half over standard servers.
- **Performance Leadership** - Through excellent application performance PRIMERGY servers have achieved various #1 rating for more than a decade.
- **Comprehensive Local and Remote Management Solutions** - Fujitsu has developed integrated software solutions to drive down infrastructure cost. Fujitsu also recognizes the need for full integration with industry leading management suites and server virtualization offerings which can be easily integrated with our servers.

■ **Service Excellence** - As part of our DNA from servicing mainframe glass-house clients, Fujitsu offers our clients quick response support. We take proactive preventative actions to minimize service interruptions and our Customer Service mantra is "A customer problem is a Fujitsu problem."

Technical analysis of PRIMERGY

As mentioned previously, PRIMERGY servers are based on Intel® and AMD® processors and support the Microsoft® Windows®, Solaris® X86, and Linux® operating systems. Additionally, PRIMERGY servers possess distinguishing features which include:

Industry-leading Reliability

PRIMERGY servers from Fujitsu lead the industry in reliability because:

■ New product development begins by using ISO 2008Q controlled design and verification processes in our PRIMERGY facilities in Germany.

■ Fujitsu invests heavily in the selection of PRIMERGY components, using quality vendors, controlled and documented acceptance procedures, and re-qualification for revised components.

■ Extensive pre-testing of components and motherboards at all levels of integration.

■ Long term burn-in tests for all systems, not just short power up/down tests.

■ Testing of systems under many different load profiles, and all possible combinations of controllers and bus loads.

■ Cool-safe technology

Cool-safe Technology

Cool-safe Technology is a holistic engineering methodology used in PRIMERGY servers. Cool-safe allows PRIMERGY servers to operate with maximum efficiency, deliver optimum performance, and provide superior reliability which includes:

■ EPA-compliant power supplies with 94% efficiency.

■ Use of computational fluid dynamics to model airflow allows heat to be channeled and distributed through the server to guarantee optimum cooling.

■ Use of air flow channels and cable-less design, whenever possible, reduces hot spots and provides unobstructed air flow.

■ Use of large fans that spin more slowly, use less power, make less noise and improve air circulation.

■ Fan speed is controlled relative to the ambient temperature through Fujitsu ServerView management software.

■ Hexagon shaped holes in server covers allow for 35-40% more airflow than circular holes.

■ Integration of the power backplane onto the motherboard guarantees a highly efficient energy transport connection from the power supplies to the motherboard.

■ Use of highly efficient DC switching converters instead of older linear converters.

The combination of these features, and many more, make up the Cool-safe technology in Fujitsu PRIMERGY servers. The net result is that PRIMERGY servers produce less heat, use less power, and generate less noise than the competition. On average, PRIMERGY servers use 20% less power than competitive Intel® servers. The benefit to PRIMERGY customers is lower electrical and cooling costs, a higher density of servers in the data center, and lower total cost of ownership.

Heat is the enemy of reliability. Unreliable systems cost time and money, and reduce customer satisfaction. It is important to understand these key points:

A 10°C increase in operating temperature reduces a server's MTBF (mean time between failures) by 50%.

■ A 15°C reduction in the temperature of electronic components doubles its operating life.

■ A 10°C reduction in the temperature of mechanical components doubles its operating life.

By running cooler, PRIMERGY servers deliver superior reliability and reduce the air conditioning load and its associated cost. This also reduces the temperature surrounding the PRIMERGY servers and improves the operating conditions for nearby equipment.

Many Intel processor servers are designed to slow down as their operating temperature increases. By allowing the processors to run cooler in a PRIMERGY server, their performance level is maintained and application response times will not be degraded.

A prime example the Fujitsu Cool-safe technology can be found in the PRIMERGY TX120 S2 model. A fully configured TX120 S2 is rated at a maximum of 120 Watts of active power. Most typical TX120 S2 configurations will use less power. In other words, the typical TX120 S2 consumes the same power as a common light bulb. When the model was introduced, it was the first Intel® server to be Energy Star® 4 compliant.

Performance Leadership

For more than a decade, PRIMERGY servers have consistently captured the #1 position in a variety of benchmarks. PRIMERGY servers have held the leadership position in the SPECjbb, SPECweb, and SAP® SD benchmarks, VMware® VMmark® as well as many others.

Fujitsu servers offer the latest processors from Intel, the E5-2600/2400 processors with up to 8 cores per socket. These processors are ideally suited for the virtualization of Windows and Linux applications. PRIMERGY Servers support the virtualization solutions from VMware, Microsoft (Hyper-V™), and Citrix® (Xen®).

Comprehensive Local and Remote Management Solutions

All PRIMERGY Servers can be easily managed via the PRIMERGY ServerView suite of software solutions. The ServerView suite is included with all servers. Our ServerView management software reduces management costs and power automation with a single point of control to reduce your TCO.

All but one PRIMERGY server models include an on onboard remote management controller, called the iRMC (Integrated Remote Management Controller). The iRMC provides functions such as system monitoring and control, system configuration, firmware updates, and service alerts. The iRMC has its own independent service LAN port, graphics controller, operating system, memory, and web server. Through the iRMC, a PRIMERGY server can be remotely powered on or off.

Service Excellence

One of the core competencies of Fujitsu is to provide mission-critical support to our customers. We have been doing this since the days of mainframe computers, as Amdahl, and continue to do so with our PRIMERGY Servers. Fujitsu's support offerings provide enterprise class service combined with a commitment to customer satisfaction. We have a network of Fujitsu staff field engineers and parts depots throughout North America. We offer 7x24x365 mission critical support offerings with as little as 2 hour response.

About Fujitsu America

Fujitsu America, Inc., is a leading ICT solutions provider for organizations in the U.S., Canada and the Caribbean. Fujitsu enables clients to meet their business objectives through integrated offerings and solutions, including consulting, systems integration, managed services, outsourcing and cloud services for infrastructure, platforms and applications; data center and field services; and server, storage, software and mobile/tablet technologies. For more information, please visit: http://solutions.us.fujitsu.com/ and http://twitter.com/fujitsuamerica

Fujitsu platform solutions

In addition to Fujitsu PRIMERGY servers, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

PRIMERGY Servers

As a global IT infrastructure provider, Fujitsu offers a complete range of servers designed to fill any role in today's business. Whether your business requires affordable entry-level servers, compact and scalable blade systems, or advanced multiprocessor servers capable of handling the most demanding data center applications, the PRIMERGY® line delivers Intel®Architecture servers with the rock-solid reliability and industry-leading performance you need.

PRIMERGY Servers

www.fujitsu.com/global/services/computing/

- PRIMERGY: Industrial standard server
- SPARC Enterprise: UNIX server
- PRIMEQUEST: Mission-critical IA server
- ETERNUS: Storage system

Software

www.fujitsu.com/software/

- Interstage:
  Application infrastructure software
- Systemwalker:
  System management software

More information

For more information, please visit:
http://solutions.us.fujitsu.com/

For Information on our Intel based PRIMERGY Servers:

http://solutions.us.fujitsu.com/www/content/products/servers/ primergy/index.php

For Information on our Enterprise Storage:

http://solutions.us.fujitsu.com/www/content/products/storage/ETERNUS/index.php

For Information on our SPARC® Enterprise Servers:

http://solutions.us.fujitsu.com/www/products_sparc.shtml?products/ servers/sparc/index

For Information on the new PRIMEQUEST® Servers:

http://solutions.us.fujitsu.com/www/content/products/servers/ primequest/

Fujitsu green policy innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at:

www.fujitsu.com/global/about/environment/

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