Moore's Law Turns to Highlighting Power Savings in Data Centers

Craig Parker, Head of Hybrid Cloud Europe at Fujitsu

In the past year, the focus on power consumption and running costs in data center infrastructure has reached unprecedented levels. Power efficiency has become a crucial factor that most customers prioritize when selecting new systems.

The first thing most customers ask me about today is the power efficiency of our latest systems.

Interestingly, the answer to the power efficiency challenge is linked to Moore's Law. This is the prediction made by Intel co-founder Gordon Moore in 1965 that the number of transistors on a microchip would double every two years while the cost per transistor would halve. Moore's Law has been remarkably accurate for over five decades and has shown clear benefits in terms of energy efficiency.

Now, Moore's Law is also showing clear benefits in terms of energy efficiency. By way of example, the performance of our newest generation PRIMEFLEX integrated systems has doubled over just 12 months, while power consumption has actually reduced.

Power efficiency has long been a focus for Fujitsu
Fujitsu has long been committed to optimizing energy consumption in data center infrastructure development. In 2006, the company joined the Green Grid and highlighted the Power Usage Effectiveness (PUE) factor for data center equipment. By the early 2010s, the number of Operations per Watt came into focus when the main issue was the physical impossibility of increasing supplies to on-premises data centers.

Cloud computing and the continuation of Moore's Law changed that over the last decade. Servers and storage have become radically more power efficient.

That brings us to today, where the latest generation of Fujitsu PRIMEFLEX integrated systems continue to drive down power consumption.

Double the performance and 12.5% savings on power and cooling costs
I was recently amazed to see incredible advances by the new-generation PRIMERGY M7 over its predecessor model, the M6, introduced just a year ago. With the new model, everything has increased except for the device's physical size. A PRIMERGY M7 still fits into a 2U chassis for rack-mounting in a data center.

Inside, a quiet revolution has taken place. The PRIMERGY M7 is more than twice as powerful as its predecessor. That means just one M7 replaces two M6 models – and will still use 12.5% less power overall.

This isn't just a comparison on paper when systems are idling. It's based on power consumption while systems run at 70% utilization, which is a realistic everyday scenario, and calculates combined power and cooling.

A Fujitsu PRIMEFLEX environment also creates a hyper-converged infrastructure with enormous consolidation potential. So, with the latest PRIMERGY M7 server generation in the PRIMEFLEX family, customers make even greater efficiency gains.

And the consolidation of cores brings further savings. In the case of a 2:1 consolidation ratio from the M6 to M7, there is a 43% price advantage per core.

A compelling reason not to artificially extend equipment lifecycles
The past few months have brought intense scrutiny on IT spending. Some organizations may consider delaying a replacement of their IT infrastructure beyond the standard three-year cycle to save costs during an economic slowdown.

However, the advances in power efficiency alone are a compelling reason to stick to regular replacement cycles. As outlined above, the performance and efficiency advances in just 12 months have been such that just one machine can replace two of the previous generation. This spotlights that artificially extending equipment lifecycles is, simply put, a false economy.

Upgrading also saves on the physical space needed within a data center for an organization to maintain the level of performance – and provides plenty of room to expand computing power without needing to grow the physical size of a data center.

And what's more, a state-of-the-art on-premises system makes good economic sense as cloud computing providers pass on higher overheads to customers by raising prices.

If you hadn't realized the extent to which data center infrastructure continues to involve, then now is a good time to explore.

Craig Parker
Head of Hybrid Cloud Europe at Fujitsu

Craig Parker is responsible for all aspects of Hybrid Cloud for Fujitsu's Product Business in Europe, including strategy, sales, marketing, product development, and partner and service management.

Hybrid Cloud is one of the strategic themes in Fujitsu's drive to become a DX company. Fujitsu's Global vision is to create a human-centric intelligent society, creating a better customer experience, leading to the acceleration of profitable growth. Fujitsu envisages a world without complexity and risk when building data centers and Hybrid Cloud infrastructures.