

Energy Efficient IT Products

Low Energy Consumption in Off/Standby Mode

In the past, the public focus has been on energy consumption in off mode and standby mode. IBM has achieved large reductions and the current low levels allow only minor further improvements. Typical examples are shown in table below. Detailed values are documented in the product environmental declaration for all products in German.

	Aus Modus	Standby Modus
PC e.g. M50	1-2 Watt	2-3 Watt
Notebook e.g. ThinkPad R51, T42	< 1 Watt	< 1-2 Watt
Monitor e.g. L170p, L190p	< 1 Watt	< 1 Watt
Desktop Printer e.g. Infoprint 1412, Color 1334	0 Watt	< 10-15 Watt

Further information are available on the product group specific environmental webpages.

More Application Performance for Less Energy

The energy efficiency of computer during operation has continuously been improving to provide higher computing performance to our customers. As the heat dissipation per chip area and the air cooling capabilities are limited, there is a very high focus on developing more energy efficient ways of computing. The IBM Austin Research Laboratory's Low Power Computing Research Center is leading in this area.

Due to IBM's long history in commitment for energy efficient product design, the IBM PowerPC technology and server system design, for example, enable IBM servers to consume significantly less energy for the same performance when compared with competition. Electricity costs of up to 2000% have been reported for pSeries competitors measured in power (kw) per TPC-C performance. This does not include the additional costs for UPS and air conditioning operation (and investment). A comparison may be profitable.

However, even energy efficient computer resources are only used part of the time - see table below - while consuming considerable energy typically above 50%.

	Peak-hour Utilization	Prime-shift Utilization	24-hour Periodic Utilisation
Mainframes	85-100%	70%	60%
UNIX Server	50-70%	10-15%	<10%
Intel-based Server	30%	5-10%	2-5%
PC, Notebook	10-20%*	2-5%*	N/A

IBM Scorpion White Paper - Simplifying the Corporate IT Infrastructure

* own estimation

There are several ways to improve the utilisation and thus increase the energy efficiency and the return on hardware investment costs:

- On Demand Computing
- Grid Computing
- Server Consolidation
- Workplace on demand with rich client software and thin client or ThinkPad notebook computer hardware

Further Information:

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