

HOB and Green IT

Green IT is the environmentally friendly and resource-sparing application of information technology. The main focus here is on the operational energy costs. In data centers there is a two-fold energy cost: the more energy required to run the computers, the more energy is needed to cool them. The increased performance of modern processors, coupled with the simultaneously increasing integration, causes more warmth per unit to be generated, which increases the demand for energy in the cooling systems. Power management mechanisms, usually found in mobile devices, generally are not used in server systems: operational energy cost optimization can best be realized by getting the most out of the existing hardware. In the following you will find several ideas on how these savings can be implemented.

Server Consolidation

Server consolidation is just what it sounds like: Various server functions are concentrated in as few pieces of server hardware as possible. IBM had already recognized the advantages of software consolidation in the Mainframe era and integrated appropriate mechanisms into their soft- and hardware. For example, the LPAR (Logical Partition), which divides up the hardware into virtual systems, or the IBM operating system VM (**V**irtual **M**achine). The IBM VM is a program that creates virtual systems on the software level. Both of these solutions enable the hardware to be used simultaneously by different and independent systems. The type of data processing is hereby apportioned out to different times of day. Programs for data acquisition are executed during the employees' work hours, while the processing of the data is often done overnight. Another approach to consolidation are blade systems. With a blade server solution, system groups such as network parts or disk systems of individual computer systems are consolidated, resulting in savings in energy consumption and TOC (total cost of ownership).

Virtualization

Virtualization also enables one to run various independent software systems on one piece of hardware. Virtualization is, as opposed to what is understood under server consolidation, a pure software solution. There is a multitude of virtualization products on the market, the market leader in this field is the company VMware. VMware enables PC platforms to run several independent guest systems on one host system.

Server Centric Computing

Server Centric Computing refers to the concentration of computing power and program processing in one central, powerful system. The employees are connected to this system via relatively low-performance and minimally equipped Thin Clients or – in earlier times – terminals. In addition to the advantages gained in ease of administration, resulting from the centralization and simplification of where the employees' data are actually being processed, there is also a reduction in total energy consumption. At the employee's workplace there is no powerful PC being used, whose CPU, with the typical workloads generated by text processing or data acquisition, usually is running at no more than 10% of its capacity.

For years, HOB has been actively supporting all the above-mentioned technologies. [HOBLink Terminal Edition](#) and [HOBLink J-Term](#) are powerful terminal emulations that provide performant connectivity to central Mainframe systems. The platform independent RDP client [HOBLink JWT](#), together with the accompanying server extensions, greatly expands the possibilities in deploying Microsoft Windows Terminal Servers. Server Centric Computing or Server-based Computing, are thus also supported. With [HOB RD VPN](#), HOB further extends Internet-based Server Centric Computing. Blade systems for the deployment of low-maintenance and energy-saving thin clients are supported by [HOB VDI Business](#). [HOB Desktop-on-Demand](#) is HOB's solution for secure remote access to individual PCs, whether in the company office or at home. With this solution the employee can remotely boot and access his or her PC or laptop over the Internet at any time. This remote booting feature also contributes to energy savings. HOB didn't invent the term Green IT, however, HOB has practiced it from the very beginning. Cost-reducing and energy saving ideas that also get high performance from existing hardware are the basis of all HOB-developed software.