Perbandingan efisiensi sistem operasi untuk mendukung green IT

Abstrak

[Krisis energi saat ini telah mempengaruhi produsen elektronik untuk membuat produk-produk yang lebih hemat energi terutama perangkat komputer. Produkproduk Teknologi Informasi (TI) yang hemat energi merupakan salah satu bentuk Green IT, yaitu penggunaan teknologi informasi secara efisien dan efektif serta meminimalisasi dampak buruk pada lingkungan. Salah satunya adalah membuat atau memilih sistem operasi yang memiliki manajemen daya dan efisiensi yang baik. Skripsi ini bertujuan mengetahui sistem operasi yang paling efisien dan hemat daya. Sistem operasi yang akan diuji yaitu Windows XP, Windows Vista, Windows Seven, Ubuntu, Ubuntu Netbook, dan Linuxmint. Pengujian dilakukan dengan berbagai cara yaitu menggunakan powermeter HIOKI untuk pengujian konsumsi daya, Super Pi untuk pengujian performa CPU dan pengujian performa boot dengan menggunakan Boot Racer untuk Windows dan Bootchart untuk Linux. Untuk konsumsi daya, sistem operasi yang terhemat bagi laptop adalah Ubuntu Netbook, yaitu lebih hemat hingga 10,67% untuk kondisi Idle dan 13,94% untuk memutar video. Untuk konsumsi daya desktop, sistem operasi yang terhemat adalah Linuxmint, yaitu lebih hemat hingga 8,80% untuk memutar video. Untuk Performa boot laptop, Ubuntu yang tercepat dengan 25 detik, 40% lebih cepat dari Linuxmint(yang terlama) dan untuk Desktop, Windows XP merupakan yang tercepat dengan 18 detik, 36% lebih cepat dari Linuxmint. Uji performa dengan Super PI menunjukkan bahwa seluruh sistem operasi relatif sama kemampuannya. Sistem operasi terbaik untuk desktop yang dipakai sebagai server, penyuntingan video atau 3D rendering/gaming adalah Windows Seven. Untuk desktop pemakaian ringan seperti kantor, multimedia atau home theather, Linuxmint merupakan sistem operasi terbaik. Untuk laptop, Ubuntu Netbook yang terbaik.
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Abstract
Current energy crisis has affected the electronics manufacturers to make products that more energy-efficient especially for computer. Energy saving IT?s products are one kind of Green IT, which is usage of IT efficiently and effectively that also reduce side effect to the environment. Operating system as a basic component of a computer plays a major role in power management and efficiency of a computer. This thesis goal is to reveal the most efficient and energy saving operating system. The operating system that will be tested are Windows XP, Windows Vista, Windows Seven, Ubuntu, Ubuntu Netbook, and Linuxmint. The testing will be

conducted with various ways, that is using HIOKI powermeter for power consumption, Super Pi for CPU performance testing and boot performance testing with Boot Racer for Windows and Bootchart for Linux. For laptop power consumption, the best are Ubuntu Netbook, 10,67% saver in Idle and 13,94% saver for playing video. For desktop power consumption, Linuxmint is the best with 8,80% saver for playing video. For laptop boot performance, the best is Ubuntu with 25 seconds, 40% faster than Linuxmint (the slowest) and the best for desktop is Windows XP with 18 seconds, 36% faster than Linuxmint. For Super Pi performance every operating system relatively have the same performance. The best operating system are, for Heavy usage e.g server, video editing, or 3D rendering/gaming is Windows Seven. For light usage, some of which are office work, multimedia or home theatre, Linuxmint is the best OS. For laptop, Ubuntu netbook., Current energy crisis has affected the electronics manufacturers to make products that more energy-efficient especially for computer. Energy saving IT?s products are one kind of Green IT, which is usage of IT efficiently and effectively that also reduce side effect to the environment. Operating system as a basic component of a computer plays a major role in power management and efficiency of a computer. This thesis goal is to reveal the most efficient and energy saving operating system. The operating system that will be tested are Windows XP, Windows Vista, Windows Seven, Ubuntu, Ubuntu Netbook, and Linuxmint. The testing will be conducted with various ways, that is using HIOKI powermeter for power consumption, Super Pi for CPU performance testing and boot performance testing with Boot Racer for Windows and Bootchart for Linux. For laptop power consumption, the best are Ubuntu Netbook, 10,67% saver in Idle and 13,94% saver for playing video. For desktop power consumption, Linuxmint is the best with 8,80% saver for playing video. For laptop boot performance, the best is Ubuntu with 25 seconds, 40% faster than Linuxmint (the slowest) and the best for desktop is Windows XP with 18 seconds, 36% faster than Linuxmint. For Super Pi performance every operating system relatively have the same performance. The best operating system are, for Heavy usage e.g server, video editing, or 3D rendering/gaming is Windows Seven. For light usage, some of which are office work, multimedia or home theatre, Linuxmint is the best OS. For laptop, Ubuntu netbook.]