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Best Practices: An Overview

Below is a brief overview of the basic minimum required to implement best practices for a home-based computer user.

Documentation

A well kept master file of all passwords for the computer, applications, web sites and hardware/software licensing keys should be kept in a safe, easily accessible place for reference by the owner and the support personnel doing the support of the computer. Any notes regarding specific configuration of hardware/software should be noted and the file updated clearly and legibly.

Any service provider specific information should be kept in the file such as internet service provider information (passwords, user ID, account numbers etc.) should be noted. Any serial numbers or other support related information regarding the computer and its components should be recorded.

All email account information and configuration information should be noted and kept in the file.

Any manuals, software discs and other items that can ease the support of the user should be stored adjacent to the documentation.

Back Up

A back up strategy that back ups all user critical data on a regular basis is paramount. The focus of the back up is in two sections.

DATA

Data back ups create copies of data that the user has archived, used recently or is of such a nature that it is required for the safe continuation of the business. Date needs to be stored on a section of a hard drive that is logically or physically separate from the main hard drive partition that contains the operating system. The reason for this is that most viruses attack the root or operating system drive and that if the operating system fails or the physical hard drive media becomes corrupt having the data in another section of a hard drive or on an entirely different hard drive will minimize a client's exposure to data loss.

A user must implement a systematic back up routine that backs up any primary data as often as once a day but no more than a week. Therefore, if properly implemented, barring delays in getting new hardware, a client only looses a weeks worth of work in a worse case scenario.

It is recommended that a master data back up be made on a monthly basis and stored in a secure location other than that of the main work computer. All portable media, whether a daily, weekly, or monthly back up should be stored in a safe, fire and waterproof storage area (i.e. a safe).

Any CRM or Outlook data (PST File) should be backed up and archived at least monthly and for users that are adding client data regularly through the work week weekly is highly recommended.

SYSTEM

System back ups are generally image files that create a mirror copy (or image) of the computer's operating system. These are ideal in case of a hardware failure such as a hard drive failing. An image file can be restored quickly compared to rebuilding and configuring the operating system from scratch. All the computer programs and configuration are also imaged at the same time so that the user can be up and running with the minimum of downtime. Given that an image restore can take 2 hours as opposed to the 4 to 10 hours needed for a complete operating system install a good imaging software can save countless hours of lost productivity.

Both the data and system back up methods is dependant on the properly configured hardware and software. Without adequate storage space for data and system files this practice cannot be implemented.

Software

Best practices require that all software used be valid, licensed copies of software. Pirated, borrowed, copied and software of unknown traceability are a false economy. Regardless of the ethical issues of intellectual property rights and copyright, a business is benefited by the support offered by obtaining the software they need legitimately. It is easier to support and configure and the threat of lost functionality or other ramifications is one concern this practice eliminates.

As software vendors implement online methods of software activation and confirmation of whether a product is licensed or not a business has greater exposure to the software they are using being crippled or made inoperative REMOTELY.

There are several ways to reduce the cost of software that can be discussed in detail in order to meet a client's specific needs. Buying OEM copies of software at a system purchase or buying site licenses are the most common methods.

All software keys should be copied (hard copy and electronically using Excel) and stored in a common file in an organized manner.

All software should be updated on a regular basis. This included the operating system, any primary programs (i.e. Office, accounting, CRM) to maintain full functionality and security. For individual users software should be updated on minimum on a quarterly basis and any specific security patches implemented as required.

Related to this is the requirement of maintaining updated operating system drivers and computer system BIOS files on a regular basis. Generally, if the computer is working reliably these do not need to be updated as stringently as operating system and programs but if any significant software installs are made these items should be attended to before an upgrade occurs (i.e. Windows XP SP3 implementation).

Antivirus Software

Good antivirus software is essential for obvious reasons. The software should be configured to do daily hard drive scans and have its virus subscription service up-to-date and current.

Malware Software

Various malware software exists that can monitor a computer and assist the user in keeping their computer in good working order. Lavasoft Ad-Aware and Spybot are examples of such.

Firewall

Windows Firewall is an adequate solution but many antivirus software bundles include more aggressive protection from intrusion.

Back Up Software

In some cases the back up utilities that Windows XP offers are adequate but not wholly satisfactory. Several off-the shelf utilities work well and often CD/DVD writing software can be configured do the task automatically.

Performance Optimization Software

It is generally recommended to use some form of reliable optimization software such as CCLeaner at least once a week. Disk defragmentation as required.

Hardware

Below are the minimum best practices recommended for a home user utilizing their computer for a home-based business.

Computer

The computer should be configured to operate reliably in the following configuration:

Case

The case should be designed for easy access for the removal and addition of any optional components. It should be properly ventilated with fans for the CPU, the power supply, and the main cavity in good working order. The case should be periodically checked that all air holes for the ingress and egress of cooling air are free and clear.

Power Supply

The power supply should be of good quality and of adequate wattage for the current and expected future use of any components that may be added later. Most entry level computers have wholly inadequate power supplies and having one that is powerful enough to meet future needs, like adding a more powerful video card, are preferred. Typical wattage minimum specification would be a 350 to 450 watt power supply.

Memory

The computer(s) should be configured with the optimal memory required to insure the smooth and reliable operation of the computer in relation to the applications used. Several factors impact the amount of memory required but in many cases in business use all too often not enough memory is installed on system purchase. This choice is further impacted if the CPU and memory share in the rendering of video images.

As a bare minimum 1 GB of RAM is recommended for a desktop or laptop system using Windows XP SP2. If the system board supports 2 memory modules it is ideal the have 2 modules of the same size so that if one fails the computer can run on the 1 remaining good module until a replacement is acquired. In this case, doubling up the memory to 2 GB would be optimal.

Indications that not enough RAM is installed are slow system boot up; slow screen re-draws; sluggish overall performance; constant hard drive activity; slow shut down and other indications that the RAM installed is not adequate and the data and programs are constantly being moved from RAM to the disk (page file) constantly.

Tier one memory is preferred.

Hard Drive

The size of the hard drive is somewhat immaterial if the data organized on it is not done correctly. Assuming the hard drive space is adequate (i.e. 75% total utilized) the data and the operating system need to be placed in at least two separate partitions. One for the operating system and one for regularly accessed data files such as recent work files and

the PST file for Outlook. This configuration insures adequate protection for data loss caused from a virus or operating system failure.

In addition, a second drive in the computer is ideal for archiving and back up of data. A remote drive can be used for this purpose and this offers the user the opportunity to store that drive in a safe location that on-site.

The cost of hard drive space and remote drives has made it possible to economically add additional hard drive capacity to meet these minimum requirements and support a regular back up process.

If the computer supports Rapid Array of Inexpensive Disks (RAID) it should be configured to realize the benefits of this technology. New computers can be easily configured to support RAID.

Video System

It is preferred to have a separate video card in conjunction with a motherboard that has on-board video. The separate video card is duty built to render video images and leave the computer CPU to do its main task: process information and other computer specific tasks. In addition, standard on-board video shares the resources of the computer CPU and RAM and robs the computer of performance.

Sound System

It is preferred, but not necessary to have a separate sound card. As in video processing a sound card is designed to create and render sound using its own processor and memory.

Monitor

A good quality monitor from a tier one vendor is recommended with access to a back up monitor should it fail. The monitor should be installed and configured with the latest drivers. In some cases having two monitors operating attached to a desktop can not only increase productivity but act as a back up should one of the monitors fail.

Optical Drive(s)

At least one DVD R/W optical drive in good working order and a second CD drive.

Keyboard and Mouse

One good quality ergonomic keyboard and mouse and access to a second set of devices in case of failure.

Speakers

One good quality speaker system and access to a second set in case of failure.

Uninterruptible Power Supply

Any desktop or laptop that is a production machine should be attached to a functioning tier 1 vender UPS. Even though laptops have their own batteries they are still subject to failure for EMP from lightning strikes or power surges from the electrical grid. A UPS can shut down an unattended desktop/laptop computer saving valuable data and preventing data corruption or system board failure.

Printer

The printer is often the most over-looked component of an office configuration. The printer should have adequate paper and toner capacity to minimize user intervention. The office should have at least one spare toner cartridge and/or OPC drum available if these components deplete or fail. The printer should be sourced so that a local service vendor can do the warranty work on it and if on-site warranty service is available standard or as an upgrade it is preferable to have that level of service as opposed to a carry-in warranty.

Internet Access

The user should have ready access to all account information required to contact their ISP support personnel. Ideally each computer accessing the internet should be configured to run on its own on the internet through a shared connection or on its own. In the case of Rogers this is a simple matter. With a service like Sympatico each computer may need to be configured to run properly on an individual basis.

A spare router on-site is recommended. Routers have become affordable so having such a device available is not economically unrealistic (i.e. TrendNet wireless 4-port router at $39.00).

The main exposure is the ADSL/DSL modem. Most service providers like Bell require the user to call in, troubleshoot and then if the unit is defective the ISP sends a new one to the client. This can take 5 business days. Rogers offers an exchange at one of their retail outlets. Buying a back up ADSL/DSL modem may be the quickest way to get up and running.

Conclusion

This list is a general overview of the minimum best practices to maintain and sustain a business operation using a computer. An on-site survey is required to fully understand the specific issues of a client.