White paper

You only have one computer?

Why multiple development computers can be helpful

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Developing software or any kind of product with multiple workstations can be very productive and cost effective. If you are using a single machine for development you may be missing some of these advantages.

Using two side-by-side machines means that you can quickly multitask between jobs. You can even be working on the same project, but in different areas almost simultaneously. While this is usually true of a single workstation, multiple computers lets you perform lengthy and CPU intensive operations simultaneously. However, the best reason for using multiple machines may be in testing your software before it goes into QA.

Developers who test their work before sending it to QA can save the company money. Using multiple machines can help developers do this. A second machine can become a perfect test station where multiple test environments can be set up. This is the perfect place to install multiple operating systems and service packs, third party products that interact with yours, and products that may compete or conflict with yours. You can even install different languages such as German, Spanish, or Japanese to test your application. Applications sometimes exhibit unexpected behavior in different locales. Installing minimal operating system environments lets you test your installer and application on virgin machines that may be closer to actual user environments. You may consider installing non-development or test software on your second machine to keep your main development machine leaner and faster. It also prevents your development environment from getting messed up by rogue conflicting software. Downloading and running software from the Internet should be restricted to the second machine to avoid viruses and spyware.

Multiple machines offer the ability to test under differing hardware such as smaller screens, slower processors, less RAM, smaller hard disks, and different

hardware ports where devices may be attached. Intentionally restricted environments may represent customer machines more accurately than your bad-boy development box. Having a second machine can also allow you to test network, database, and web-based applications in more "real life" settings. You may discover the need for network and database optimizations. Lastly, using a laptop as a second machine lets you take a copy of your work with you on the road, doubling as a quickie backup machine.

Extra machines cost money, and managers are hesitant to purchase computers without a clear return on investment justification. Consider that a typical PC costs $2000 U.S. If each development-to-QA interaction, such as the simple communication that results from a bug, costs your company $100, then the machine could pay for itself within 20 bugs. Not to mention that a single bug could cost your company in lost sales and lost customers. Finding those bugs early, at the development stage, improves quality.

Having a second computer at your disposal is great, but installing Windows operating systems and service packs over and over again is a lot of work. Suppose you need to test your installer and software on a virgin machine to closely emulate actual customer environments. How do you do it? You could reformat the hard drive, install Windows, and then install necessary service packs, but that would take a long time, especially if you do it repeatedly.

Hard disk imaging software like Norton Ghost® is one pretty cool alternative. Within minutes you can re-image the hard drive with various operating system versions, languages, service packs, and a host of applications. To make things quick, you can store these disk images on a file server, and access them over the network upon demand. This approach allows you to use a physical machine to test your product in a variety of configurations. But, there is even a better approach.

Microsoft Virtual PC trumps both the manual CD install and hard disk imaging techniques. Virtual PC lets you create separate virtual computers on a single PC. Each virtual computer virtualizes the hardware of a complete physical computer. Just make sure you have plenty of RAM, hard disk space, and CPU horsepower on the host computer.

With Virtual PC you can easily specify certain hardware configurations such as the amount of memory, number and size of hard disks, and network adapters to emulate different hardware configurations. You can use a feature called "undo disks" that allows you to boot a virtual PC that you've previously configured, install your application and perform tests, and then shut down the virtual PC, discarding all the changes that were made during that session. When you boot up that virtual PC next time, it will be virgin again. That is a great time saver! You can have multiple virtual PCs running at once, which makes testing networked applications much easier. While using the virtual PC, you can interact with your host development machine. For example, you can cut/copy/paste between the two and easily share files. Virtual CD-ROMs can be mounted into a virtual PC, which means you never have to physically mess with CDs or floppies (once everything is set up), yet you can test any scenario you need. You can download an ISO image for an operating system, and then mount that ISO image as a CD into a virtual PC without ever having to burn a physical CD. The virtual PC doesn't know the difference.

Regardless of your approach, a second or third computer can significantly increase quality and efficiency of product development, and give you multiple environments to test and work in.

About Us

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Thousands of small to large businesses, in dozens of countries worldwide, trust their mission critical business processes to Scoutwest products. Standard Time® and Standard Issue® work together to offer well-rounded project management solutions.

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