Ultimate Flexibility

Armed with all of this trickery, we now have a highly optimized emulation system that can be improved and extended without the need for major architectural revision. A better compiler can be plugged into the backend of the system, and other components can be adapted and replaced with different implementations to suit a wide range of purposes. For example:

- The data that forms the virtual hard disk could actually be served (on demand) by any server anywhere in the world.
- The user interaction of the emulated system (virtual screen, keyboard, and mouse) could be via a remote system.
- JPC can run x86 software on any standard Java 2 virtual machine, and thus the underlying hardware can be chosen independently from the choice of operating system and software. In addition, the complete state of the virtual machine can be saved and the emulated machine "frozen" in time. It can then be resumed at a later date or on a different physical machine without any of the hosted software being aware of any change.

Flexible Data Anywhere

With JPC, your disk image can be carried with you on a memory stick, together with a complete JVM and JPC code. You can then plug this into any computer and "boot" your machine up to do all your private email and other work, and when you finish and unplug, you've left nothing on the host hardware.

Alternatively, your hard disk image could reside on a server on the Internet, and you could access your own machine from anywhere in the world simply by loading a local JPC and pointing it to your server. Together with suitable authentication and transport security, this becomes a powerful tool for the mobile workforce. JPC's natural fit in the Java space means that almost any device can be used as the end portal for remote access, from Java-enabled browsers to mobile devices.

For sensitive work in a highly secure environment, data security and integrity can be enforced at the most basic hardware level by working on local JPC instances whose hard drives are located on a secure server close by. Each worker gets full control of the virtual hardware they're working on, thus enabling them to work effectively. However, there is no way for them to extract data from the system, even if they try to hack the physical security of the computer in front of them: the local machine knows practically nothing of the application running inside the JVM, inside JPC, inside the guest operating system, and so on.

Even when employee trust is not an issue, working on virtual machines, especially one as flexible as JPC, means the physical hardware becomes completely replaceable at a moment's notice. Thus for disaster recovery and ultimate backups, where the entire state of the machine is backed up, not just the hard disk data, emulators such as JPC offer powerful advantages where instant failover is important (even over the WAN).