

Emulation

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Emulation is probably the virtualization technique that most of us think about when we think about hardware virtualization. As its name implies, emulation is where the hypervisor emulates a certain piece of hardware that it presents to the guest VM, regardless of what the actual physical hardware is. Basically the guest operating system has no awareness of its status as a guest operating system or that it is running in a foreign environment.

When emulation is used, you get the classic benefit of VM portability but the worst possible performance. This makes sense if you think about it, because the hypervisor needs to receive the instructions for the fake hardware it's emulating and then translate those to whatever the real hardware needs. Anyway newer technology is coming up. Updated emulation software and drivers, and faster 64-bit host processors make emulation a viable virtualization option.

The best example of hardware emulation software is probably QEMU (http://wiki.qemu.org/Main_Page).

— [Alessandra Scicchitano](#) - 2013-01-16