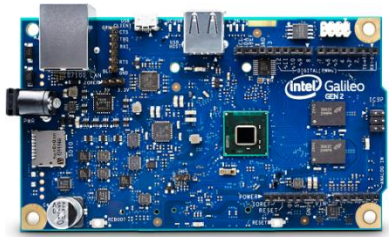
Experimental setup

Components Required

- Host OS: To type in the assembly program.
- X86 Hardware: To run the assembly program.
- Serial Cable: To download the program from Host to x86 hardware.

Host OS

Serial Cable



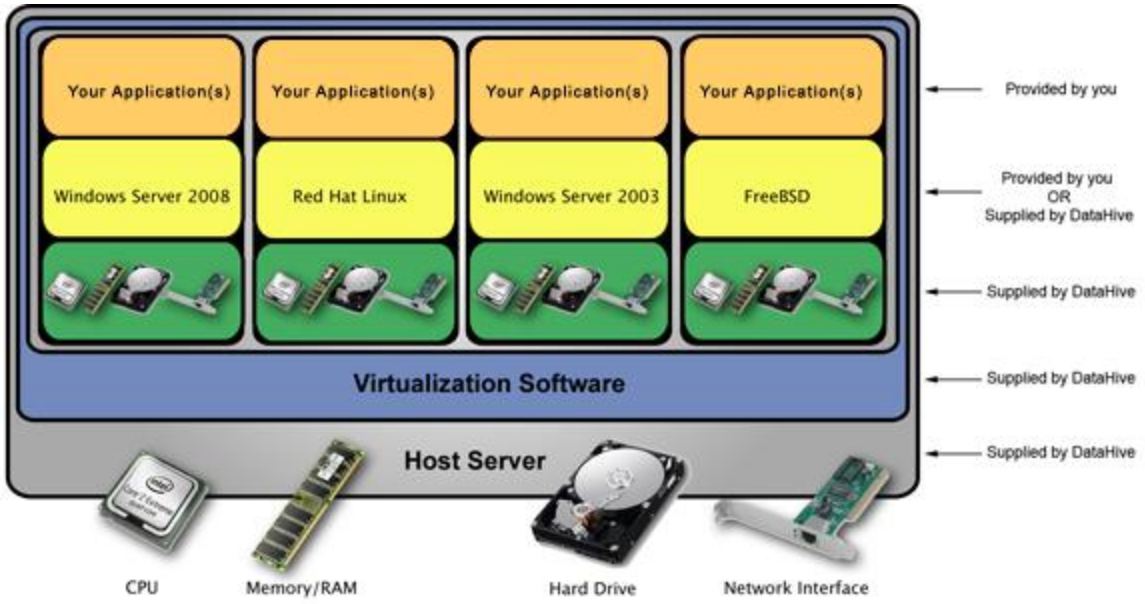
X86 hardware

Challenges

- Cost of Infrastructure
- Serial connection might not be stable
- Resetting x86 hardware is painful
- Limited debug support in x86 hardware
  - JTAG is a possible solution to this

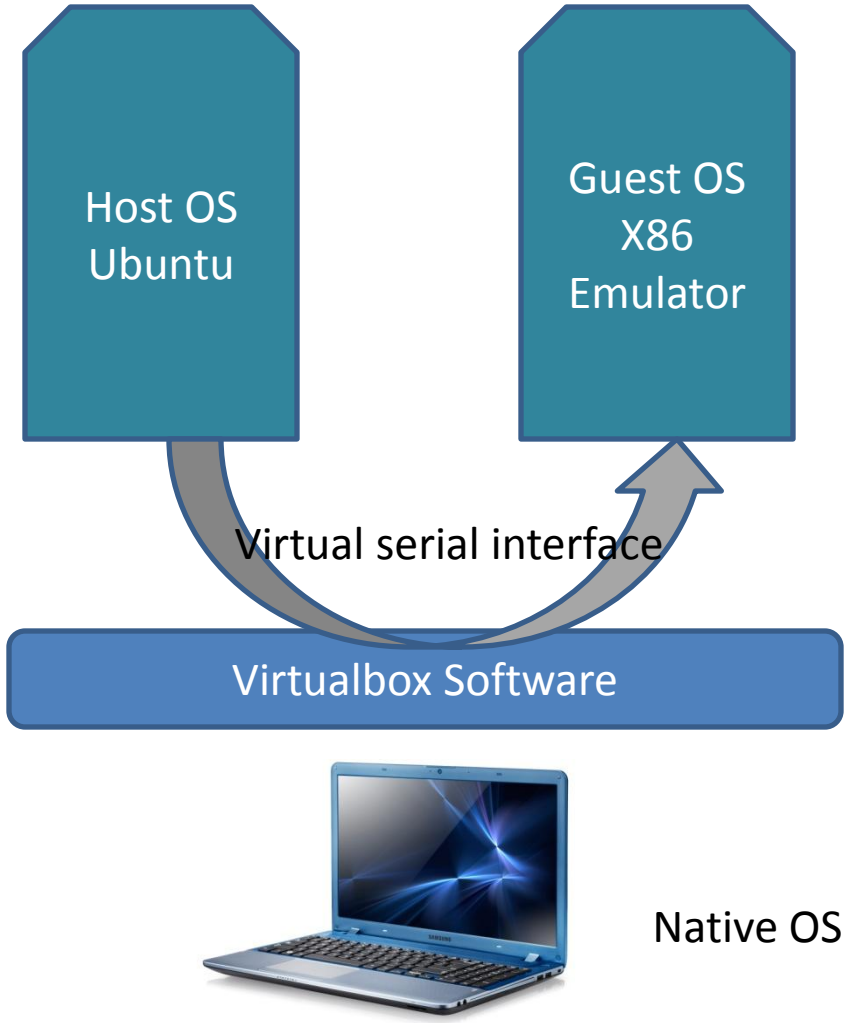
An Alternative Setup: Virtualization

- **Virtualbox**: A software that runs on your machine, and is capable of hosting multiple virtual OS'es.
- Each virtual OS thinks that it is running on a bare-metal hardware.



Our Setup using Virtualization

- **Native OS**: Your laptop, where virtualbox is installed. [windows or mac or Linux]
- **Host OS**: A virtual OS that is used to type the assembly program.
- **Serial Cable**: Emulated by virtualbox's serial interface.
- **Guest OS**: A GDB based kernel that runs on an x86 emulator. It runs as a virtual OS.



- Installation videos are provided in the following link: https://drive.google.com/folderview?id=0B69BNkSCKIrVRkwteUV4SnNzdkk&usp=sharing