Networked Device Drivers

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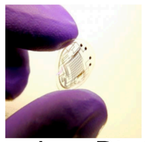
Small Devices


Zypad Wearable


iPhone


Netbook


Nanotech


Contact Lens Display (UW)

I/O


Camera

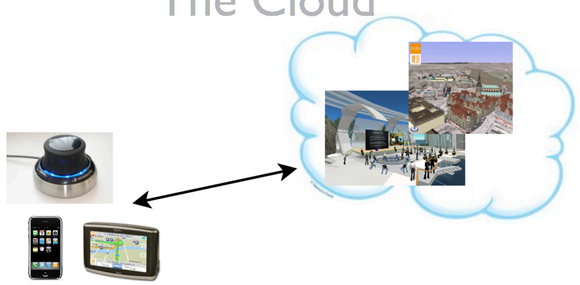

Space Navigator


RFID


GPS


Microphone

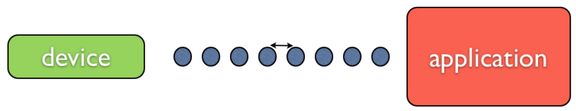
The Cloud



We Need a Generic System for Remote I/O

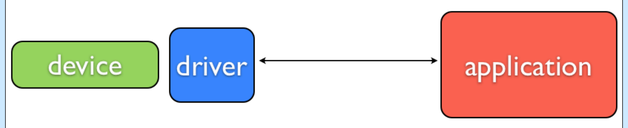
- Flexible
- Easy to extend/edit
- Performance Sensitive

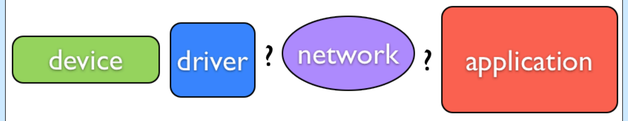
I/O Performance



Updates go from single and frequent, to grouped and farther apart.

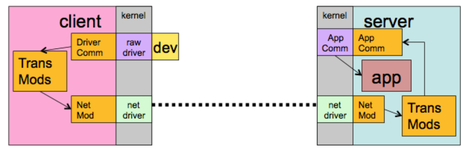
I/O Architecture





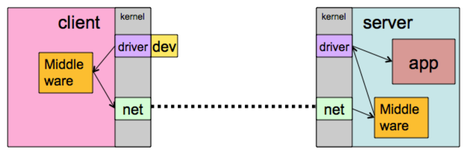
Applications can no longer communicate with drivers via API calls.

Architecture

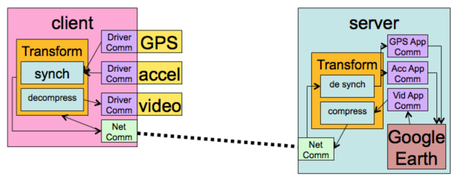


Functionality

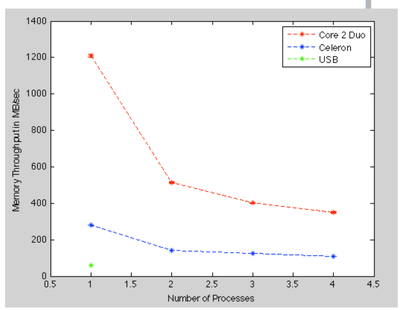
- Functionality needs change on an application-device basis
- Device designers, application designers and users may all have different functionality needs



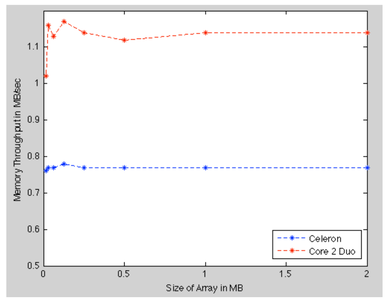
Middleware Example



Multi-Process Pipes



1 Process Encryption



4 Process Encryption