Reincarnating PCs with Portable SoulPads
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Problem statement

- Todays laptop computers give users two highly desirable features. One is the ability to suspend a computing session and resume it later, perhaps at a different location. The other is access to their personal and familiar software environment wherever they are.

- In spite of this convenience, a major drawback of this model is that the user has to carry a fairly bulky device.

- In addition, though docking stations allow the user to use a larger display and attach some peripherals, the user is limited to the capabilities of the hardware integrated in the portable computer, such as the processor and memory.

Solution approach

- They present SoulPad, a new approach based on carrying an auto-configuring operating system along with a suspended virtual machine on a small portable device.

- They decouple the users machine into a body (display, CPU, RAM, I/O) and a soul (session state, software, data, preferences). The soul is carried in a small and light portable device, the SoulPad.

- The computers on which the SoulPad can reincarnate itself on are denoted as EnviroPCs. They presently rely on USB 2.0 connections between the SoulPad and the EnviroPC. The EnviroPCs CPU, memory and I/O devices are used to run the software on the SoulPad.

Strong points

- Their approach incurs an increased resume time due to the Host OS auto-configuration needed to be independent of any installed software on the EnviroPC.

- Their proposal is very creative. Today's Samsug Dex technique is similar to their proposal. This paper is written at 2005, so their proposal is creative.

Weak points / Limitations

- Their proposal have lowered the security and privacy risks for SoulPad users.

- When use VM technology for mobility we encounter the situation of suspending a VM on one machine and resuming it on another machine that may not support the same set of instructions.

Questions

- Recent day, Isn't it more effective when using cloud service than their proposal?

New ideas / Comments

- They are using SoulPad, but I think Cloud service like IaaS(Infrastructure as a Service) can address problem. This paper proposal using Soulpad and store OS and others. Unlike this proposal, Cloud service can stroe OS and others at cloud server. So I think Cloud computing can address problem what the authors try to address. Moreover, 5G can reduce latency between server and device. So Cloud service is the key.