Lifelong Personal Health Data and Application Software via Virtual Machines in the Cloud

ABSTRACT:

Personal Health Records (PHRs) should remain the lifelong property of patients, who should be able to show them conveniently and securely to selected caregivers and institutions. In this paper, we present MyPHRMachines, a cloud-based PHR system taking a radically new architectural solution to health record portability. In MyPHRMachines, health-related data and the application software to view and/or analyze it are separately deployed in the PHR system. After uploading their medical data to MyPHRMachines, patients can access them again from remote virtual machines that contain the right software to visualize and analyze them without any need for conversion. Patients can share their remote virtual machine session with selected caregivers, who will need only a Web browser to access the pre-loaded fragments of their lifelong PHR. We discuss a prototype of MyPHRMachines applied to two use cases, i.e., radiology image sharing and personalized medicine.