Fact sheet

HP Labs Drives Innovation in Intelligent Infrastructure and Dynamic Cloud Services

Open innovation initiative with Intel and Yahoo! aims to deliver on promise of cloud computing

Researchers at HP Labs, the central research arm of HP, will use the newly announced Cloud Research Test Bed – a collaboration among HP, Intel and Yahoo! – to work with industry leaders, academia and governments worldwide to advance innovation in the area of cloud computing.

Cloud computing plays a key role in realizing HP's vision of Everything as a Service, where devices and services will interact seamlessly through the cloud, and businesses and individuals will use services that anticipate their needs based on location, preferences, calendar and communities.

HP Labs, which recently sharpened its focus to help HP and its customers capitalize on this industry shift, will use the test bed to conduct advanced research in the areas of intelligent infrastructure and dynamic cloud services. Initially, HP Labs will focus its research in the test bed on five projects:

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- Cells as a Service, a prototype management system for cloud infrastructures that centers on the creation of Service Cells – secure "containers" for virtual infrastructure elements. Each Cell can contain an arbitrary assembly of virtual machines, virtual storage volumes and virtual networks, connected into whatever design of IT infrastructure a customer desires. Cells are securely isolated from one another, although connectivity between Cells can be established in controlled ways. This enables the management of a cloud infrastructure to be automated and allows for the dynamic deployment and management of services offered through the cloud. The project will be conducted by researchers in the Automated Infrastructure Lab at HP Labs Bristol.
- The Exascale Data Center Project aims to radically redesign the future data center and its computing components, delivering significantly improved customer experience at dramatically lower costs. The proposed new data center will be built from simple, cost-efficient "building blocks" of hardware and software designed by the HP Labs research team. This project will be conducted by researchers in the Exascale Computing Lab at HP Labs Palo Alto.
- The goal of the Scalable Storage Project is to develop an enterprise storage service that can automatically scale to store petabytes of data across geographically dispersed locations, and offers a non-stop, fault tolerant, self-managing platform that can be

simultaneously used by multiple parties for different purposes. This project will be conducted by researchers in the Storage and Information Management Platforms Lab at HP Labs Palo Alto.

- Service Lifecycle Management (SLiM) is a management system for converting any type of application into a service – not just traditional services – and managing the lifecycle from design, to deployment, to adaptation, to termination. SLiM will leverage the automated infrastructure made possible by the Cells as a Service system to automatically manage the lifecycle of cloud services. This project will be conducted by researchers in the Automated Infrastructure Lab at HP Labs Bristol.
- The Sustainable Data Center Project focuses on developing sustainable IT approaches that are more energy efficient and will reduce the environmental impact of the massive data centers required to house cloud computing systems. This project will be conducted by researchers in the Sustainable IT Lab at HP Labs Palo Alto and Bristol.

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