

Infrastructure Management of Hybrid Cloud for Enterprise Users

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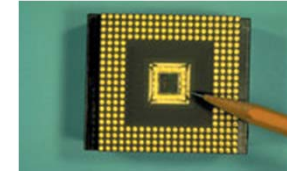
Outline

- Introduction to HP Labs
- Motivations
- Monsoon – hybrid cloud management solution
- Demo
- Summary

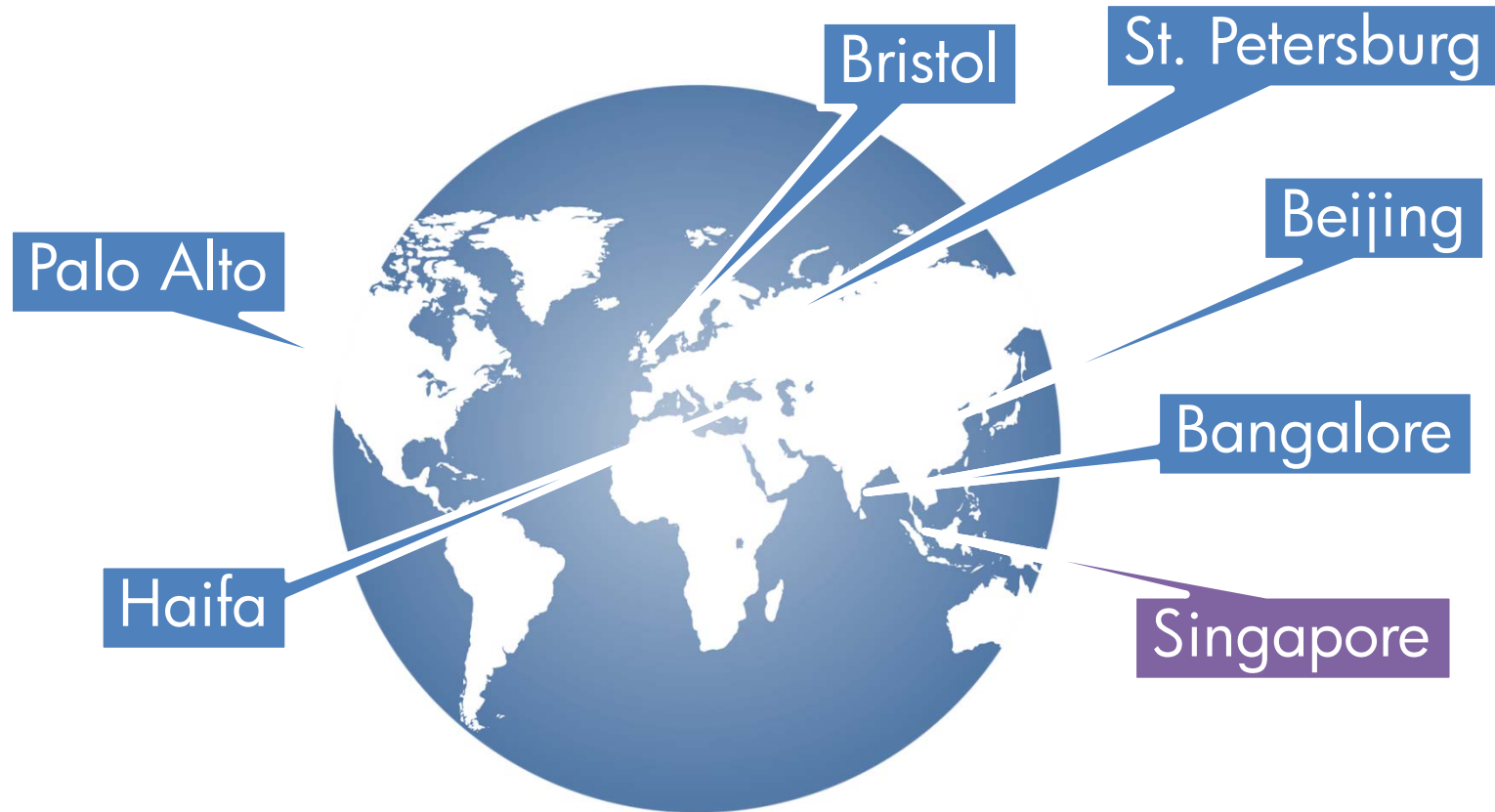


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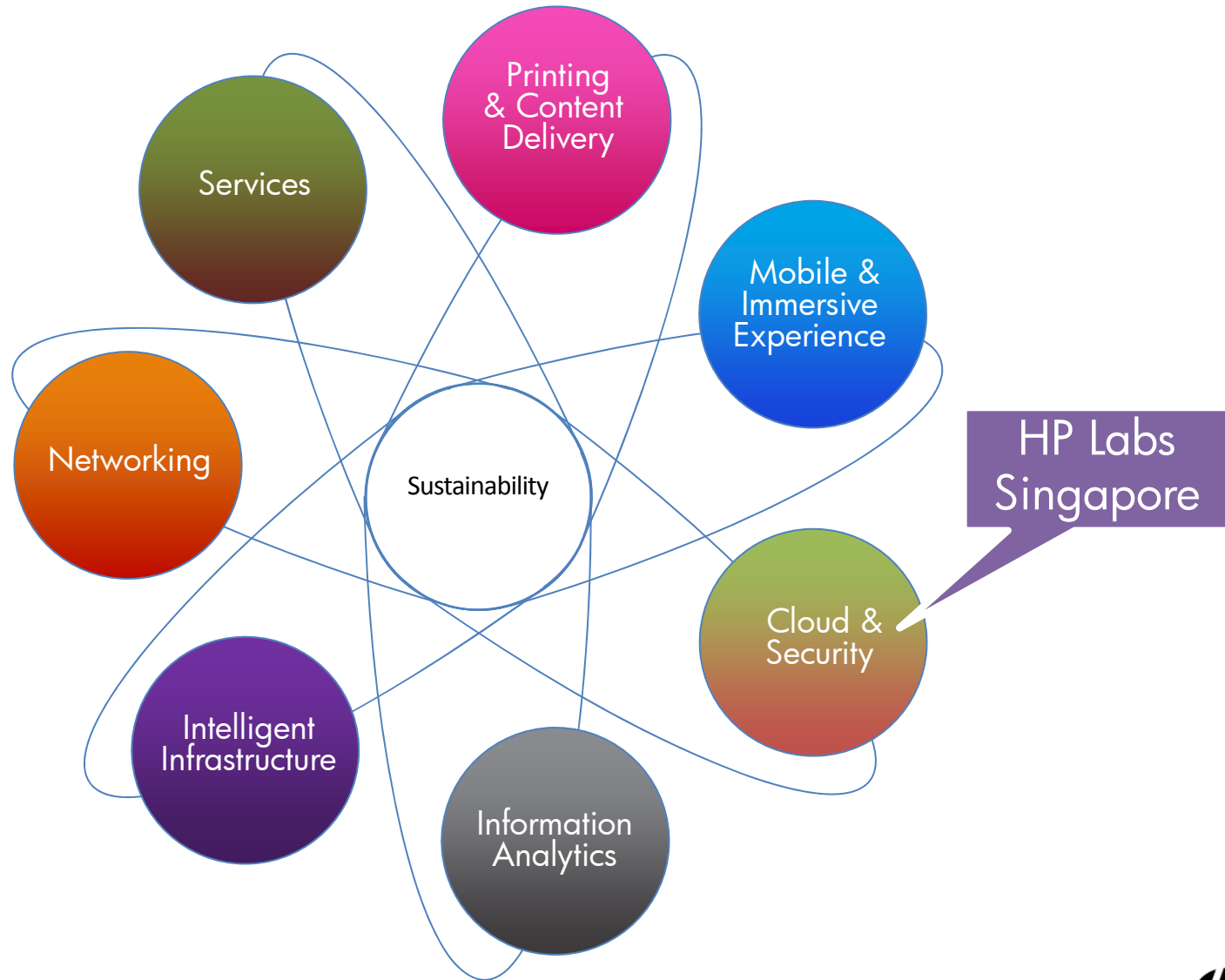
- Exploratory and advanced research group for Hewlett-Packard
- Global organization that tackles complex challenges our customers and society are facing over the next decade
- Pushes the frontiers of fundamental science
- HQ Palo Alto



HP Labs Around the World



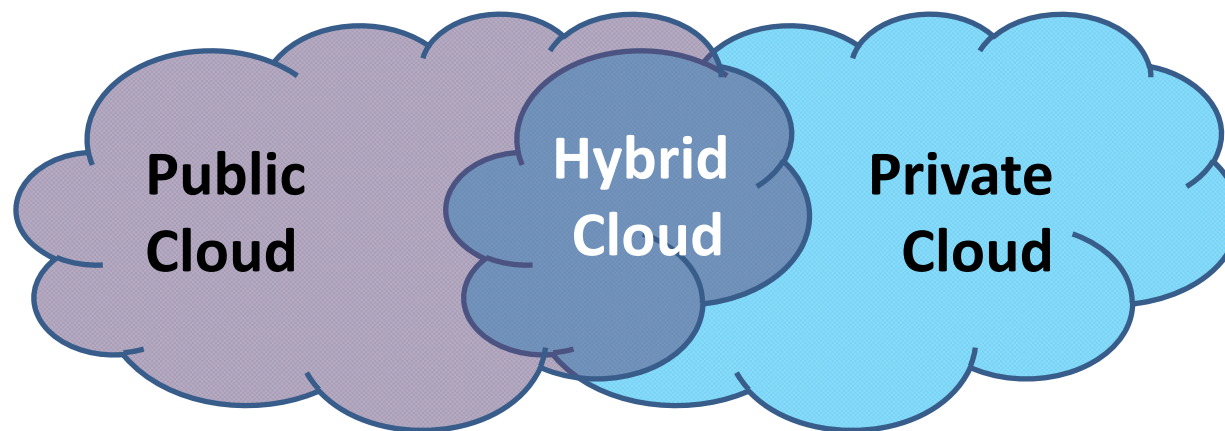
HP Labs innovation areas



Cloud Computing for Enterprises

Hybrid clouds are inevitable for enterprises

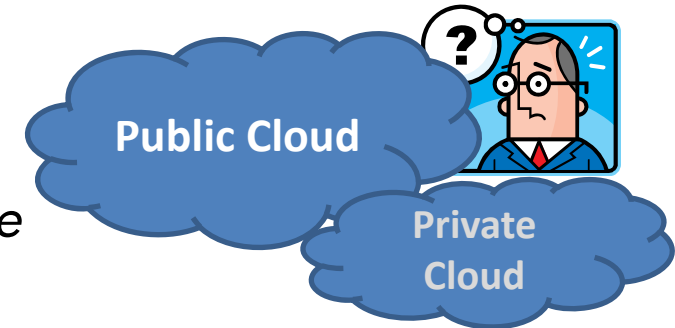
- *Evolutionary adoption of cloud*
- *Cost and scale*



Challenges

- Manageability of Hybrid Cloud

- *Proprietary APIs from public and private cloud providers → Vendor Lock In*
- *Need Multi-Sourcing cloud providers but NO common API*



- Lack of support to Enterprise User's needs in current IaaS offering

- *Enterprise user and resource management*
- *Accounting and Billing for organization*
- *Resource provisioning based on based on price, quality, and compliance with enterprise policies and standards*



OBJECTIVE

Manage heterogeneous
cloud resources across
multiple providers



What kind of management system

- Multi-Tenant support

Support multiple organizations

For example: Government Cloud

Platform Admin – G-Cloud

Ministry Admin – Ministry G-Cloud

Normal User – Department/Project...

- Enterprise-Class Access Control

Integration with *Enterprise Directory* (LDAP...)

role hierarchy

...



What do enterprise users require

- Managing full life-cycle of heterogeneous infrastructure
 - modularity, encapsulation, abstraction and loose coupling to IaaS.
- Policy based cloud service selection
- Billing/Reporting for aggregated information
- VM migration in hybrid cloud to enable cloudbursting



Screenshot – Monsoon Portal

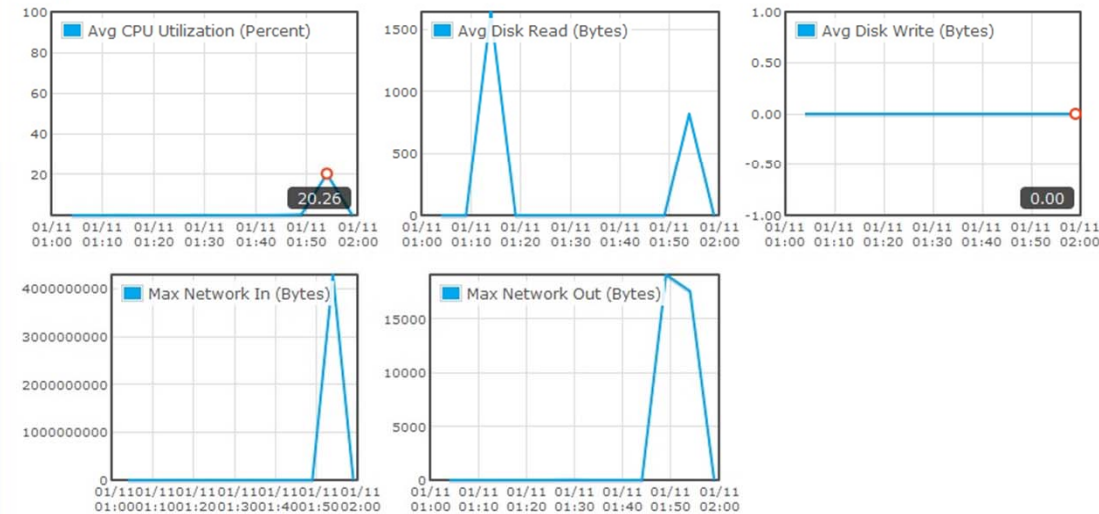
Cloud Resources

<input type="checkbox"/>	Cloud Provider	Resource Type	Status	Resource Id	Platform	Comment	Group
<input type="checkbox"/>	EC2	Storage	available	vol-aa564dc3		testing data	US East Webfarm
<input checked="" type="checkbox"/>	EC2	VM	running	i-8e4678e3		web server	Test Servers
<input type="checkbox"/>	EC2	VM	stopped	i-147b4579			
<input type="checkbox"/>	RackspaceCloud	VM	running	476845	Ubuntu 10.04 LTS (Lucid)	meeting room booking system	US East Webfarm
<input type="checkbox"/>	EC2	VM	stopped	i-6a04a307		App Server	Test Servers
<input type="checkbox"/>	GoGrid	VM	running	128529	RHEL 5.4 (32-bit)		US East Webfarm
<input type="checkbox"/>	GoGrid	VM	running	128530	Windows 2003 Standard (32-bit)	Blog Server	Test Servers
<input type="checkbox"/>	GoGrid	VM	running	128337	RHEL 5.4 (32-bit)		Test Servers

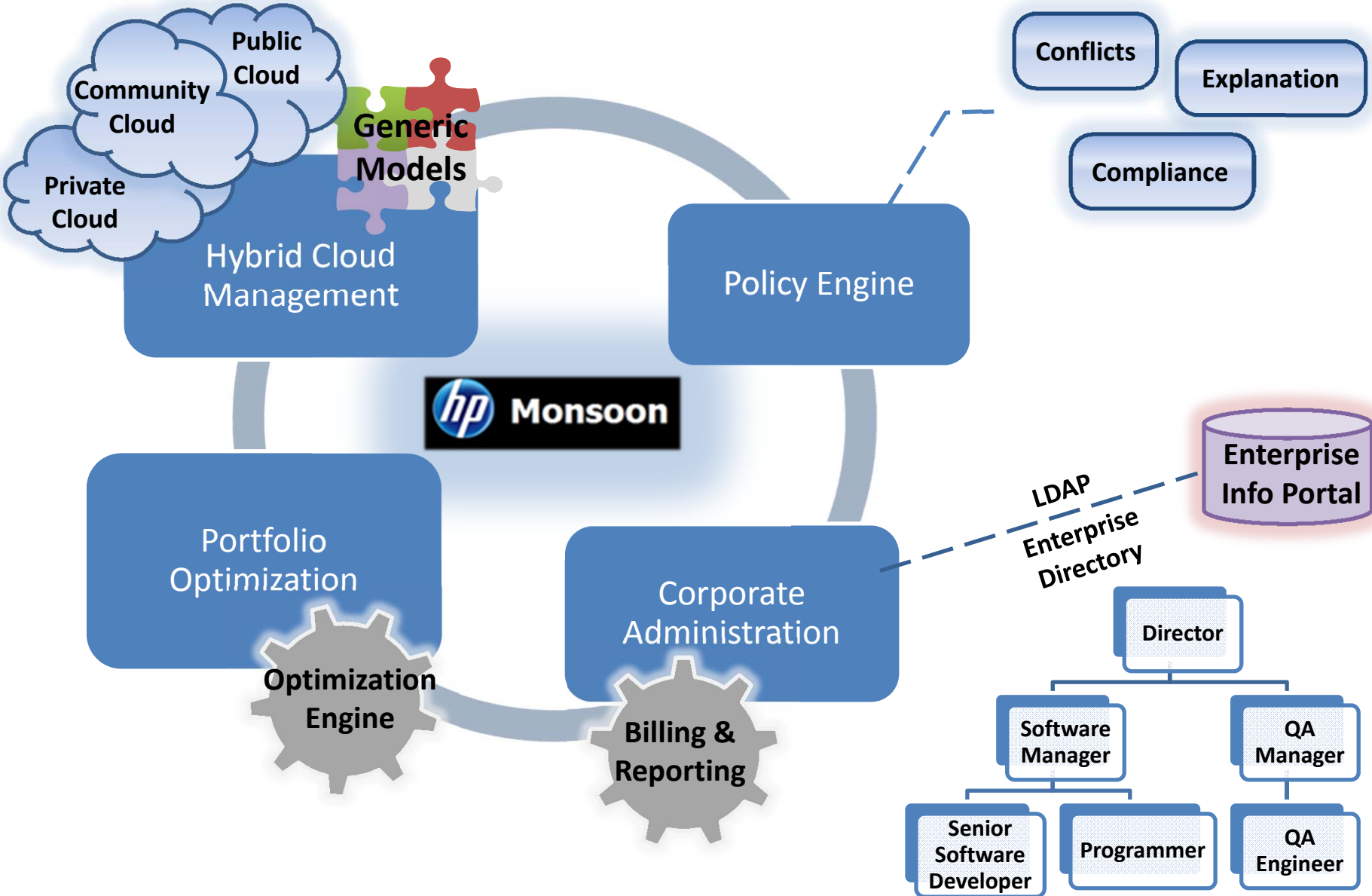
Details

EC2 VM (i-8e4678e3)	
Status:	running
Friendly Name:	demoForESSN
Region:	us-east-1
Availability Zone:	us-east-1c
Image ID:	ami-16a3577f
Config:	m1.small
Platform:	
IP Address:	ec2-50-16-107-224.compute-1.amazonaws.com
Credential:	webService
Group:	Test Servers
Comment:	web server

Graphs



Our solution - Monsoon




Demo



Thank You!

More information on Monsoon

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