IBM Software Group

智慧IT架構之
雲端虛擬最佳化攻略

Lilian Wang

WebSphere Technical Sales Support

IBM Taiwan Software Group
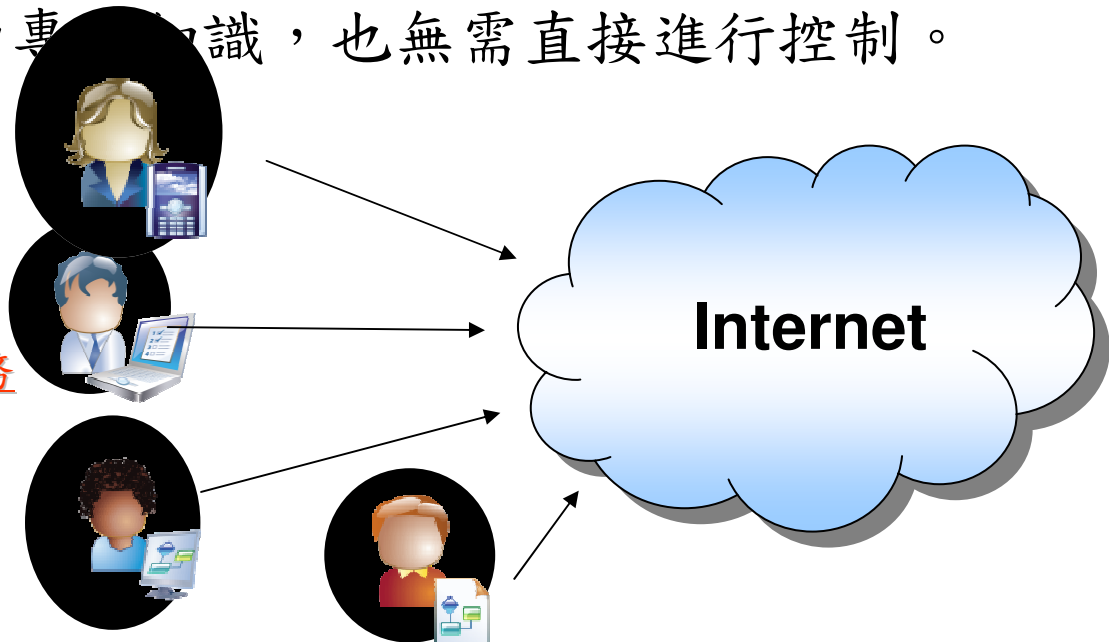
WebSphere software

What is Cloud Computing

- 繪製網路配置示意圖時(Computer Network Diagrams)，習慣將網際網路(Internet)用一朵雲(Cloud)來表示。

- 根據中文Wiki百科全書的解釋，雲端運算是一種運算方式，運算資源是<u>動態易擴充</u>而且<u>虛擬化</u>的，往往透過網際網路提供。使用者不需要了解「雲端」中基礎設施的細節，不必具有相應的專業知識，也無需直接進行控制。

- <u>特徵</u>：
  - ▸ <u>標準化的服務</u>
  - ▸ <u>按需擴充套件和使用</u>
  - ▸ <u>快速部署資源以獲得服務</u>
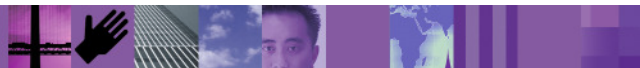 - ▸ <u>運用虛擬化技術</u>
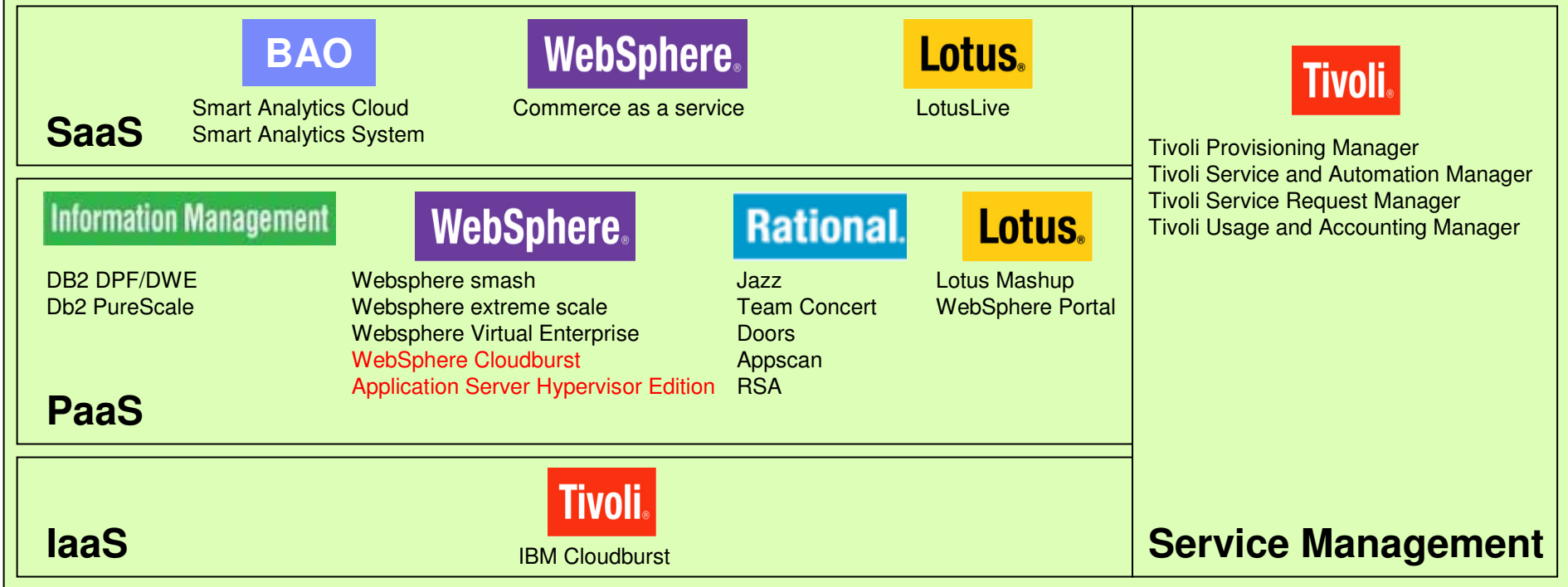 - ▸ <u>按使用量計費</u>

Internet

IBM Software for Cloud

Influenced products

Tivoli monitoring, Tivoli storage manager…
WebSphere process server, application server…
DB2, Information Integrator…
Rational Clearcase, Rational Clearquest,
Lotus Domino, Connections…

Core products

BAO

Smart Analytics Cloud
Smart Analytics System

WebSphere

Commerce as a service

Lotus

LotusLive

Tivoli

Tivoli Provisioning Manager
Tivoli Service and Automation Manager
Tivoli Service Request Manager
Tivoli Usage and Accounting Manager

SaaS

Information Management

DB2 DPF/DWE
Db2 PureScale

WebSphere

Websphere smash
Websphere extreme scale
Websphere Virtual Enterprise
WebSphere Cloudburst
Application Server Hypervisor Edition

Rational

Jazz
Team Concert
Doors
Appscan
RSA

Lotus

Lotus Mashup
WebSphere Portal

PaaS

Tivoli

IBM Cloudburst

**IaaS**

Service Management

現行架構可能面臨的問題

- The average lead time to get a new application environment up and running is 4-6 weeks
  - Approvals, procurement, shipment, HW installation, license procurement, OS installation, application installation, configuration

- 30% of bugs are introduced by inconsistent configurations
  - They often emerge when moving between dev/test, QA, production

- 根據IBM的報告指出有 40% 的使用者能源的耗損超過了實際的需求，平均 X86 硬體使用率只有 10-15% (IDC and vmware.com)
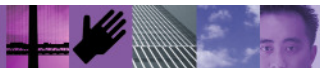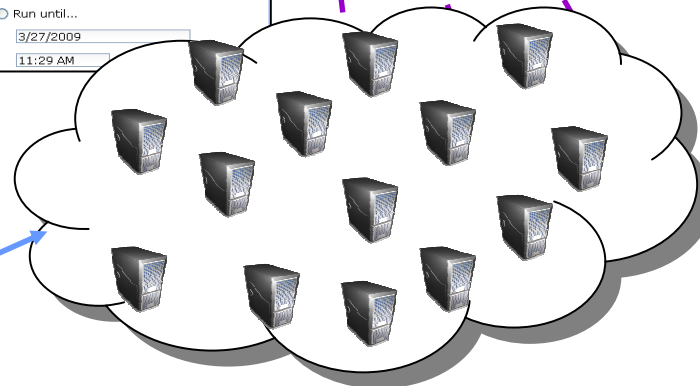
Two new WebSphere Cloud Products

1) WebSphere CloudBurst Appliance
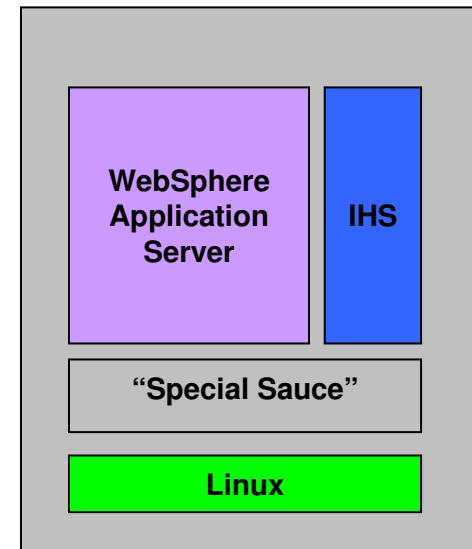### (hardware/firmware: manages/dispenses stored images)

2) WAS HyperVisor Edition
(Virtual Image-software)
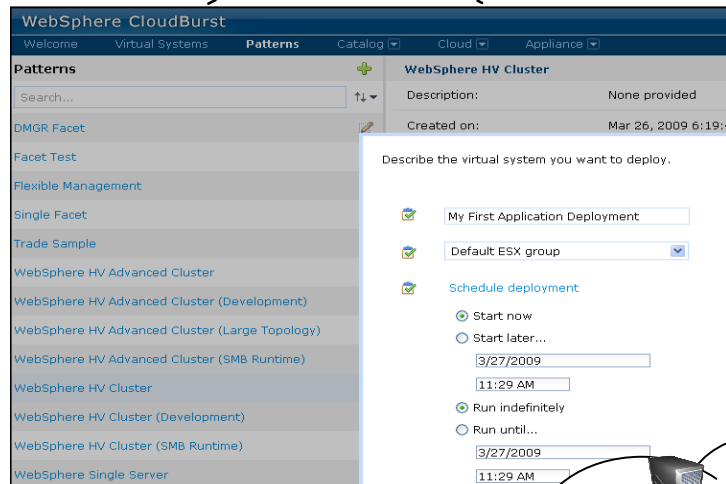
2) CloudBurst dispenses WAS HV Servers

1) User requests WAS Environment to be dispensed

3) User can access WAS HyperVisor Servers (Virtual Image)

WebSphere Application Server	IHS

**"Special Sauce"**

Linux

The WebSphere CloudBurst appliance dispenses these virtual images into a private cloud
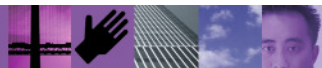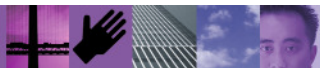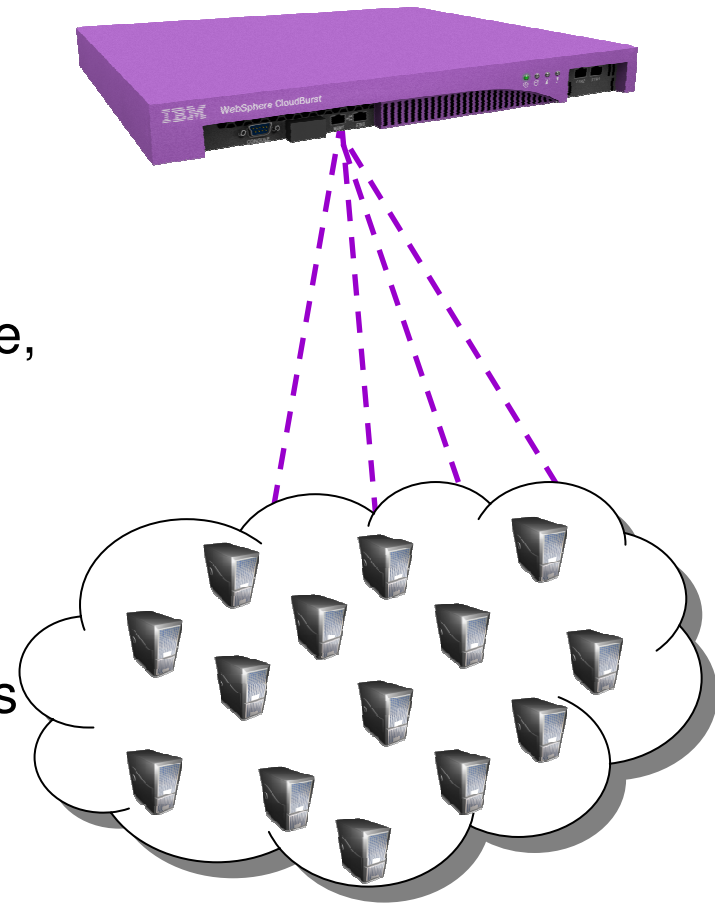
WAS HyperVisor Edition (WAS HV)

- WAS shipped ready to run on a hypervisor

- No installation required (just run and choose a profile)

- Single virtual image capable of supporting single servers or clusters

- WAS v6.1 and v7 available at GA

- Full support for WAS Feature Packs

- Images supported and maintained by IBM

- Based on OVF standard

WebSphere Application Server	IHS
Customization/ Connection function	
Operating System	
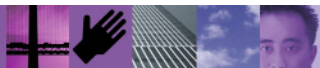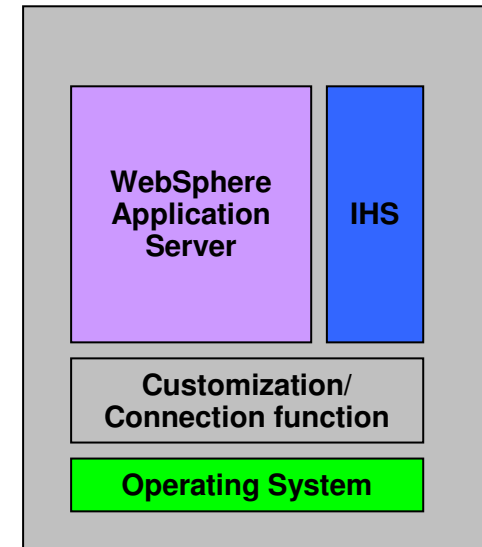
WebSphere CloudBurst Appliance

- Reduce setup time for WebSphere environments

- Codify your infrastructure for reduced risk

- Simplified maintenance and management

- Dispenses WebSphere virtual image software, e.g. VMWare, PowerVM, z/VM

- Secure, self-service cloud management device

- Enables consistent & repeatable deployment of application environments based on patterns

- Integrates with existing infrastructure through programmable REST APIs
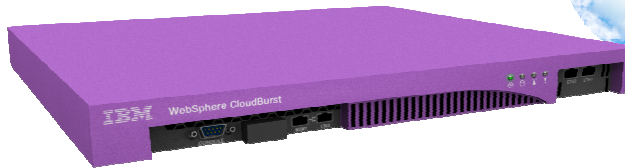
Working Together

At end of reservation,
remove virtual image(s)
from cloud

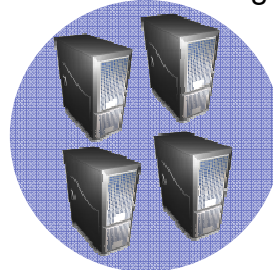Return capacity
to available pool

Out of the box:
- WAS 6.1 Hypervisor Edition
- WAS 7.0 Hypervisor Edition
- Management console
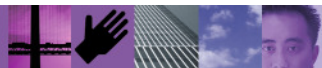- Pre-defined patterns

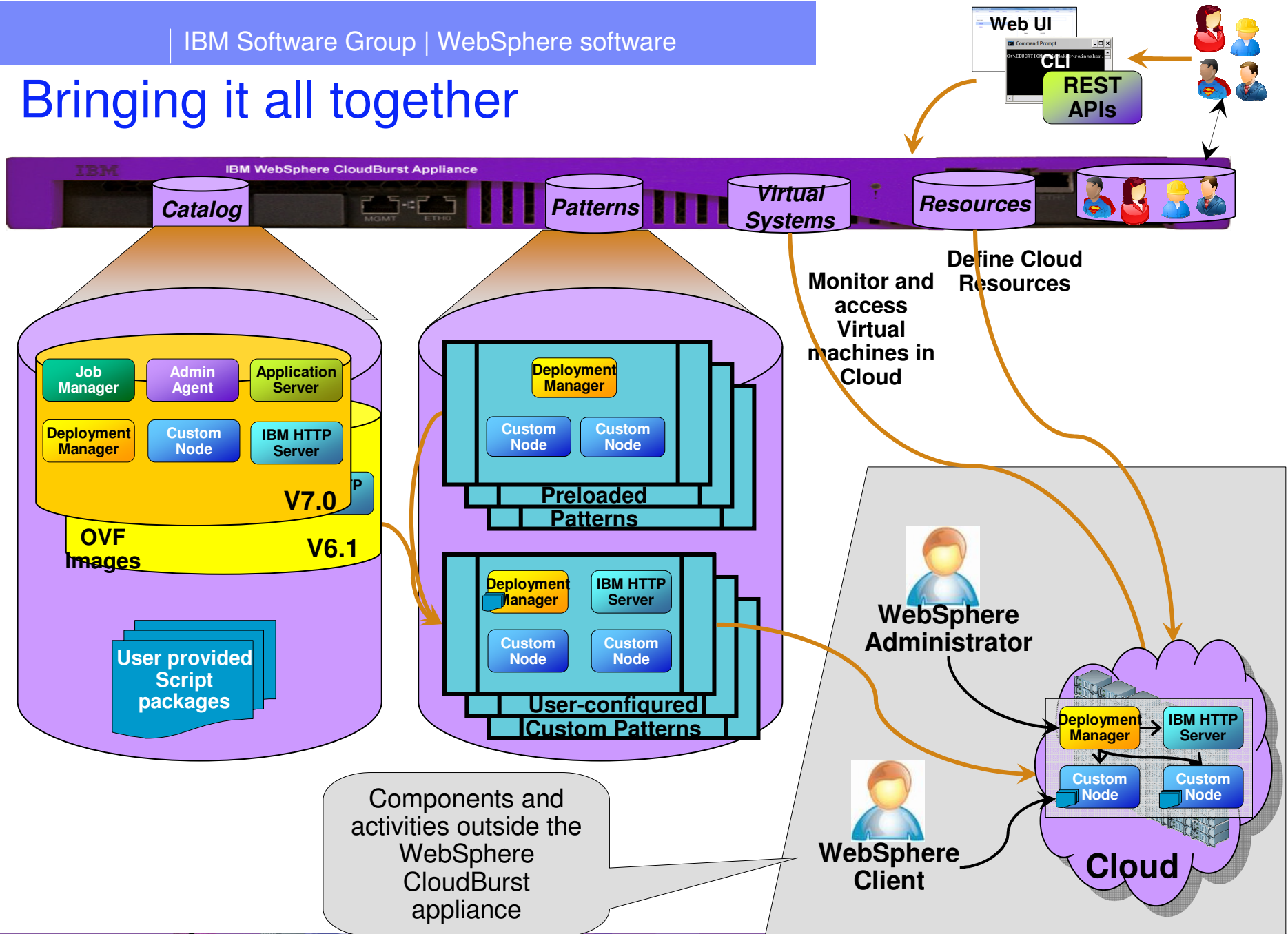Run in cloud computing
environment

Custom:
- Customer-defined configurations

Dispense single virtual image
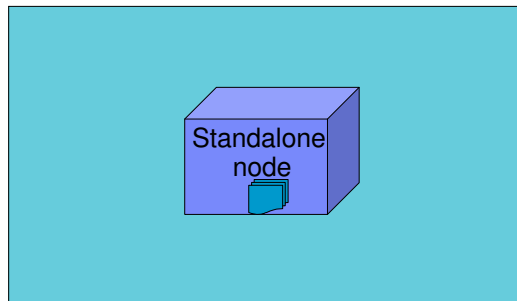or customer environment
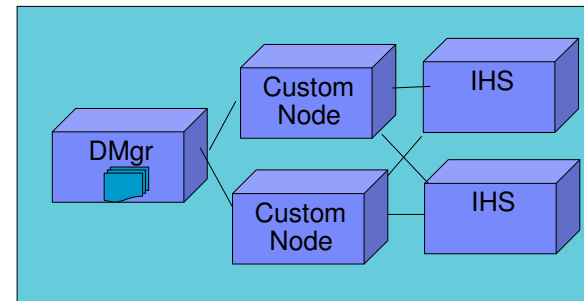
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Bringing it all together

Web UI

CLI

REST APIs

IBM WebSphere CloudBurst Appliance

Catalog

Patterns

Virtual Systems

Resources

Define Cloud Resources

Monitor and access Virtual machines in Cloud

Catalog:
- Job Manager
- Admin Agent
- Application Server
- Deployment Manager
- Custom Node
- IBM HTTP Server

V7.0

OVF Images

V6.1

User provided Script packages

Patterns:

Deployment Manager
- Custom Node
- Custom Node

Preloaded Patterns

Deployment Manager — IBM HTTP Server
- Custom Node
- Custom Node

User-configured Custom Patterns

WebSphere Administrator

WebSphere Client

Cloud
- Deployment Manager → IBM HTTP Server
- Custom Node
- Custom Node

Components and activities outside the WebSphere CloudBurst appliance

Preloaded Patterns

Single Server

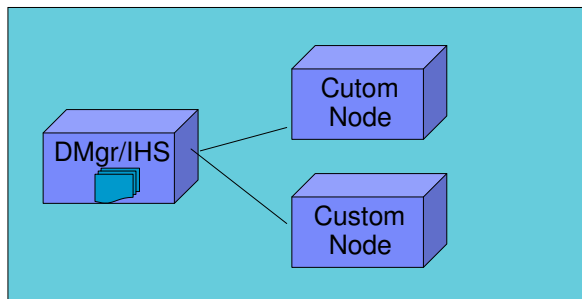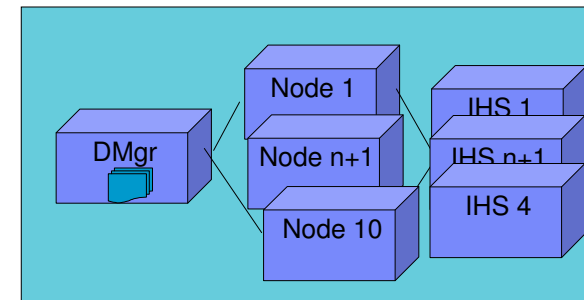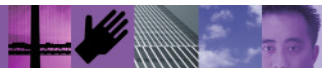### WebSphere cluster

WebSphere cluster (dev)

WebSphere cluster (large)

Advanced Options for Messaging, Session Persistence, and Global Security

What's new in WebSphere CloudBurst Appliance V2.0?

▶ **Expanding platform support**

- System Z support (z/Linux on z/VM) – delivered in March 2010
- Support for Red Hat Enterprise Linux on X86 – **NEW!**

▶ **Expanding product support (beyond WebSphere Application Server and DB2)**

- Policy-based management support (Intelligent Management Pack) – **NEW!**
- WebSphere Process Server Virtual Image - **NEW!**

▶ **Mission-critical management**

- Elasticity of dispensed environments – **NEW!**
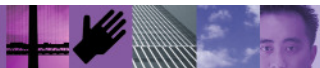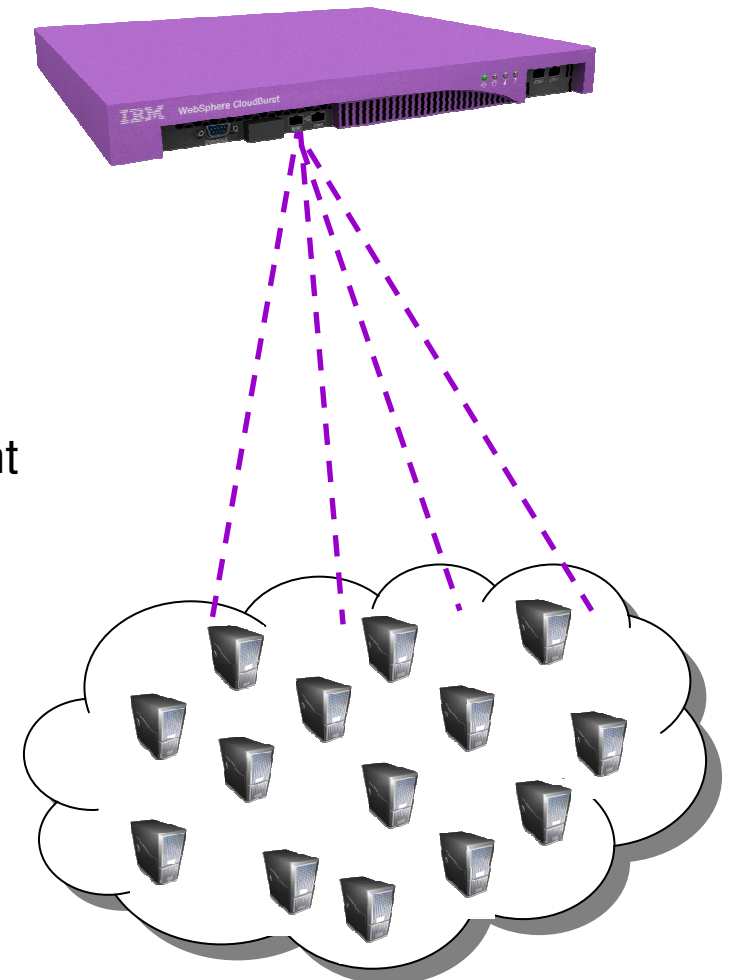
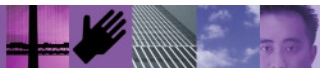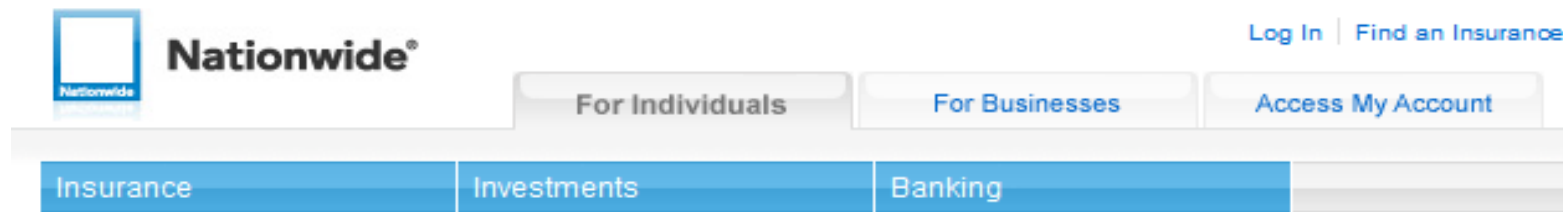# Insurance Company Improves fix management - Nationwide
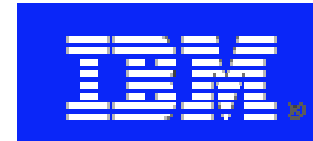
Nationwide

Industry Pains

- Deployment of maintenance takes approx. 30 minutes

- Deployment of maintenance is a manual process, often executed in the middle of the night

Smarter Business Outcomes

- Deployment took 4 minutes!
- Deployment was automated
- Deployment was able to be scheduled, so no one had to wait up to kick off the process

Nationwide   Log In | Find an Insurance

| For Individuals | For Businesses | Access My Account |

| Insurance | Investments | Banking |

# IBM Lab Increases Productivity and Agility

Industry Pains

- OS security compliance issues due to virtualization

- Low rates of hardware utilization

- Agile development requires high quality and broader testing

Smarter Business Outcomes

- No OS security compliance violations in 4 months

- Increased server utilization up to 90%

- Reduced standardized topology deployment from over 2 hours down to 18 minutes

- Leveraged existing hardware and software assets

Why Smart SOA Infrastructure?

"The ability to provide compliant patterns and images in our public lab while leveraging the speed and rapid deployment of virtualization is significant for our efforts to consolidate hardware, and reduce costs while at the same time providing onDemand access to development and test environments necessary for Agile development". **Frank Varone, Test and Quality Manager for WebSphere Application Server**
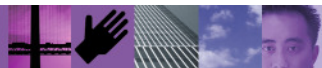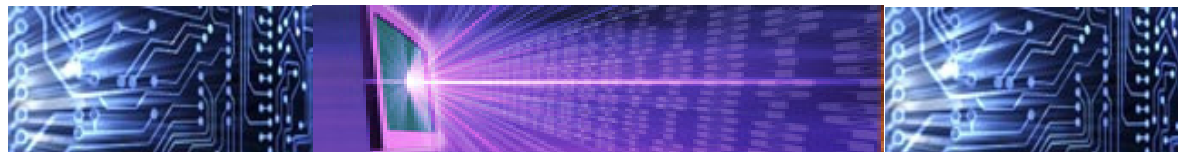
WebSphere CloudBurst Appliance Benefits

- **Consistency**
  - Your IT architect is a smart, likely well-paid person. It'd be great to be able to "bottle" his/her knowledge and share it throughout the organization. Now you can, w/ WebSphere CloudBurst Appliance's pattern facility
  - With new PowerVM support, this point is even stronger! Now, you can use the same patterns on X86 for dev/test as you use on PowerVM for production!

- **Cost**
  - Because of silos and isolation in organizations, there is difficulty in making use of idle compute capacity. By creating a managed shared resource pool, idle compute capacity is more readily available to a broader set of users. This increases utilization, which reduces costs.

- **Auditability**
  - When moving to a shared resource model, a question arises as to who pays for what. WebSphere CloudBurst Appliance can tell you who used what, and when, and you can use this information for chargeback purposes.

- **Speed / Lead time**
  - Instead of waiting days, weeks, or even months for a new environment to be made available for a new project runtime environment or a dev/test environment, you could have it in < 10 minutes w/ WebSphere CloudBurst

- **Skills**
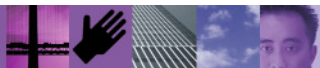 - WebSphere CloudBurst offers an incremental approach to learning WAS and building the skills to adopt it, as it handles the heavy lifting for you. As such, WebSphere CloudBurst is an enabler for folks who are still building their WebSphere Application Server skills
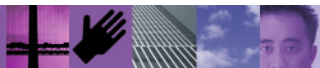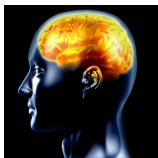
WebSphere CloudBurst Demonstration
Better, Faster, Cheaper!

Thank you for your time!

Lilian Wang

WebSphere Technical Sales Support

IBM Taiwan Software Group

what makes you *
special?

innovation for new answers