

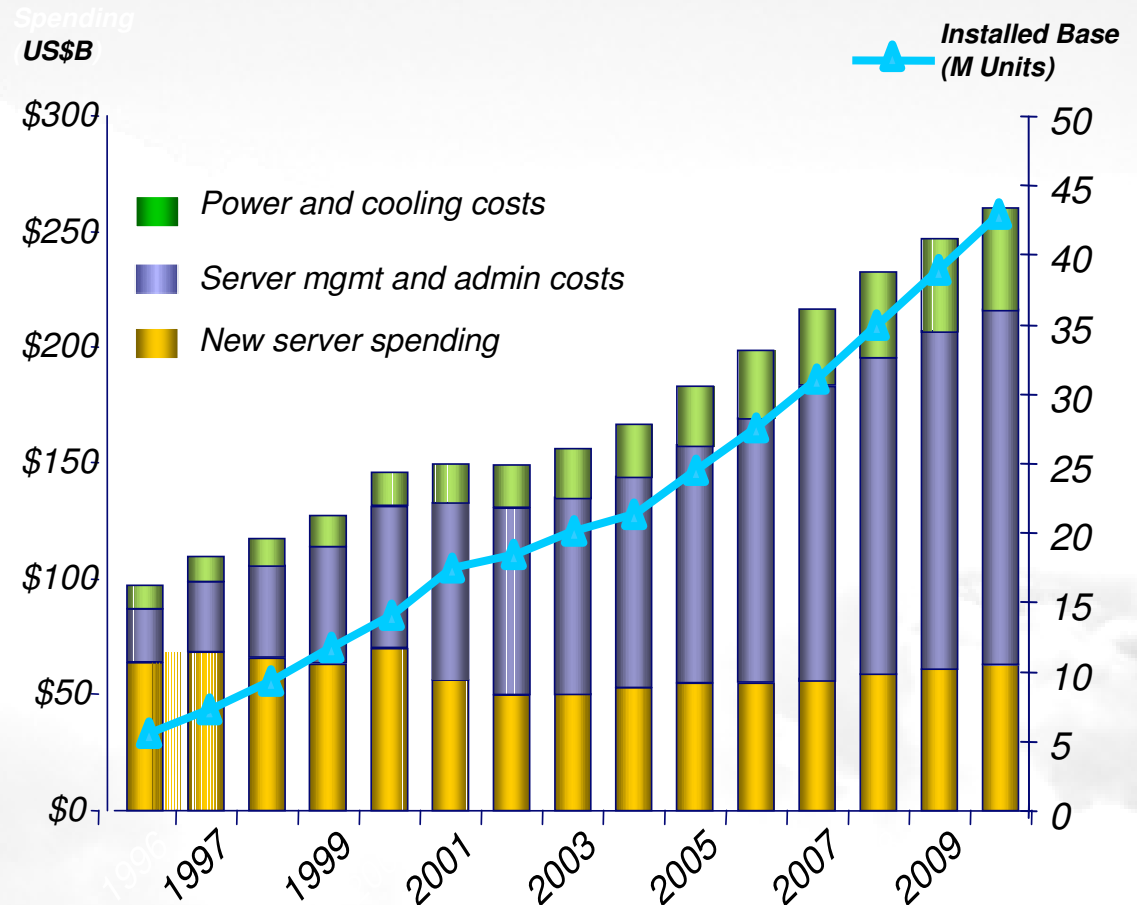
# Developer Cloud 開發攜手向雲端



Joseph Chang  
Senior I/T Specialist  
IBM SWG, Rational

# Business Problem – IT costs are increasing

- **Costs to manage systems has doubled since 2000**
- **Costs to power and cool systems has doubled since 2000**
- **Devices accessing data over networks doubling every 2.5 years**
- **Bandwidth consumed doubling every 1.5 years**
- **Data Doubling every 18 months<sup>1</sup>**
- **Server processing capacity doubling every 3 years<sup>2</sup>**
- **10G Ethernet ports tripling over the next 5 years**



Source: IDC, 2008

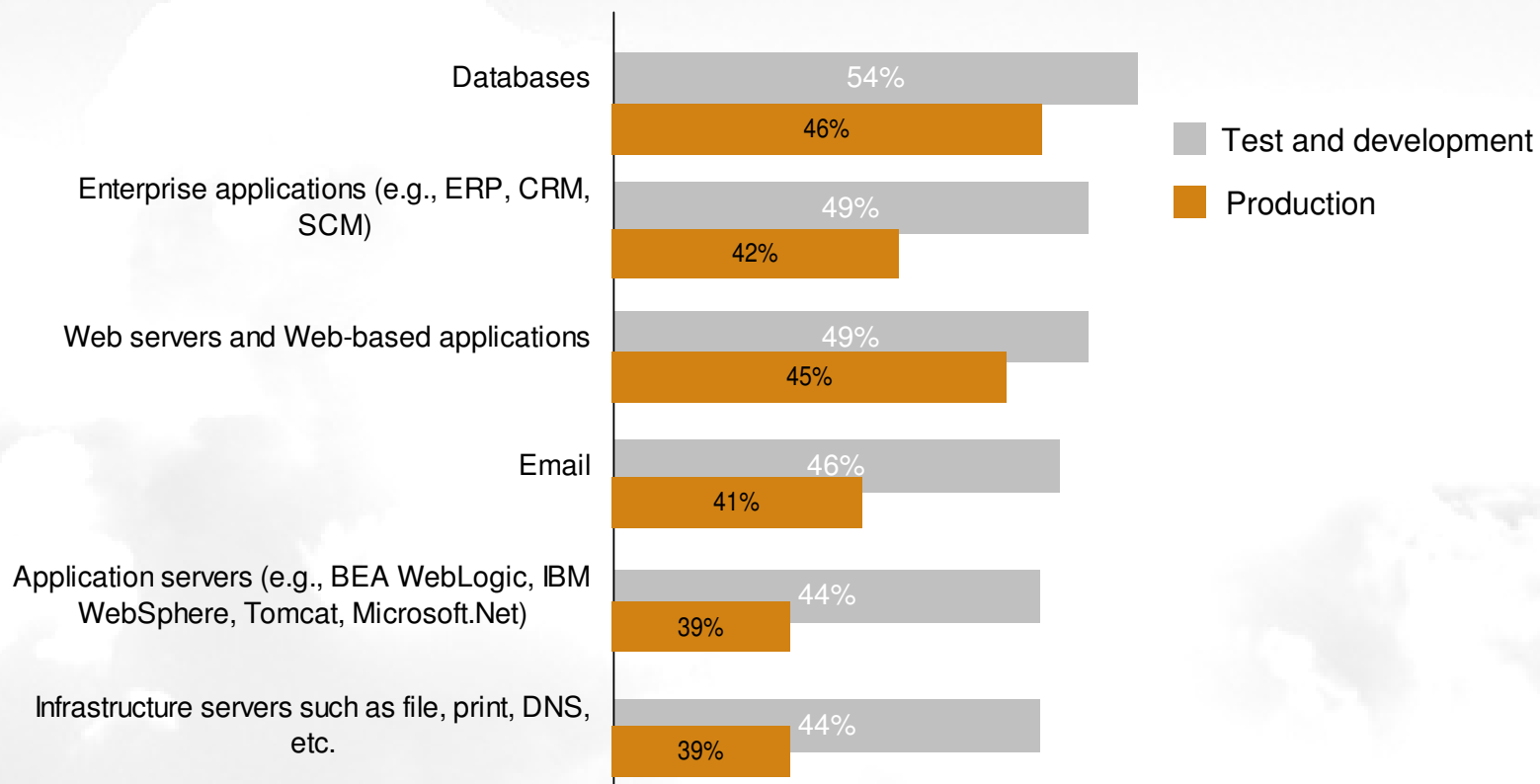
<sup>1</sup>WW TB Capacity Shipped on Enterprise Disk Storage Systems

<sup>2</sup>Server processing consumption doubles every 3 years



# *Enterprises are more comfortable with test and development “in the cloud” than production use*

**“For each of the following workloads, what is your company’s type of use or expected type of use for pay-per-use hosting of virtual servers?”**



Base: 439 North American and European hardware decision-makers at enterprises with interest in or implementation of pay-per-use hosting of virtual servers

Source: Enterprise And SMB Hardware Survey, North America And Europe, Q3 2008



# IBM Rational Software Delivery Services for Cloud Computing

Optimize investments → Lower costs with dynamic provisioning → Enabling IBM agility@scale → Collaboration & governance in cloud delivery

Rational software

BETA

1. IBM Smart Business Dev & Test on the IBM Cloud
2. IBM Rational Software Delivery Service for the Cloud

700+ registered users  
Rational Beta Kickoff 5 Clients

VIRTUALIZATION



STANDARDIZATION



AUTOMATION



Cost

Flexibility

**IBM** Strategy & Change Consulting for Cloud  
Testing Services for Cloud  
Global Business Services

**IBM** IBM Smart Business  
Test Cloud Services  
Global Technology Services

An evolution of *Jazz* in the Cloud

Software Delivery Processes



# Cloud Drives New Sourcing Options

## Private ...

Client owned and managed.

Access defined by client.

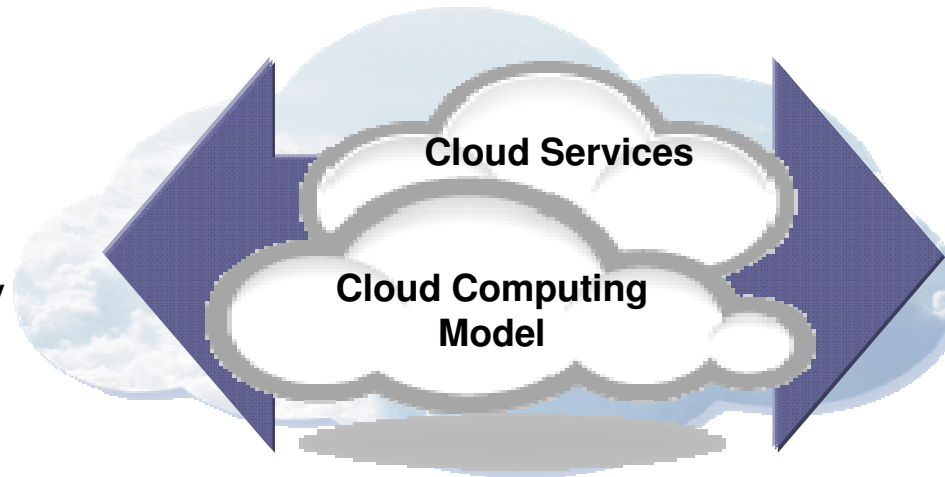
.... Customization, efficiency, resiliency, security and privacy

## Public ...

Service provider owned and managed.

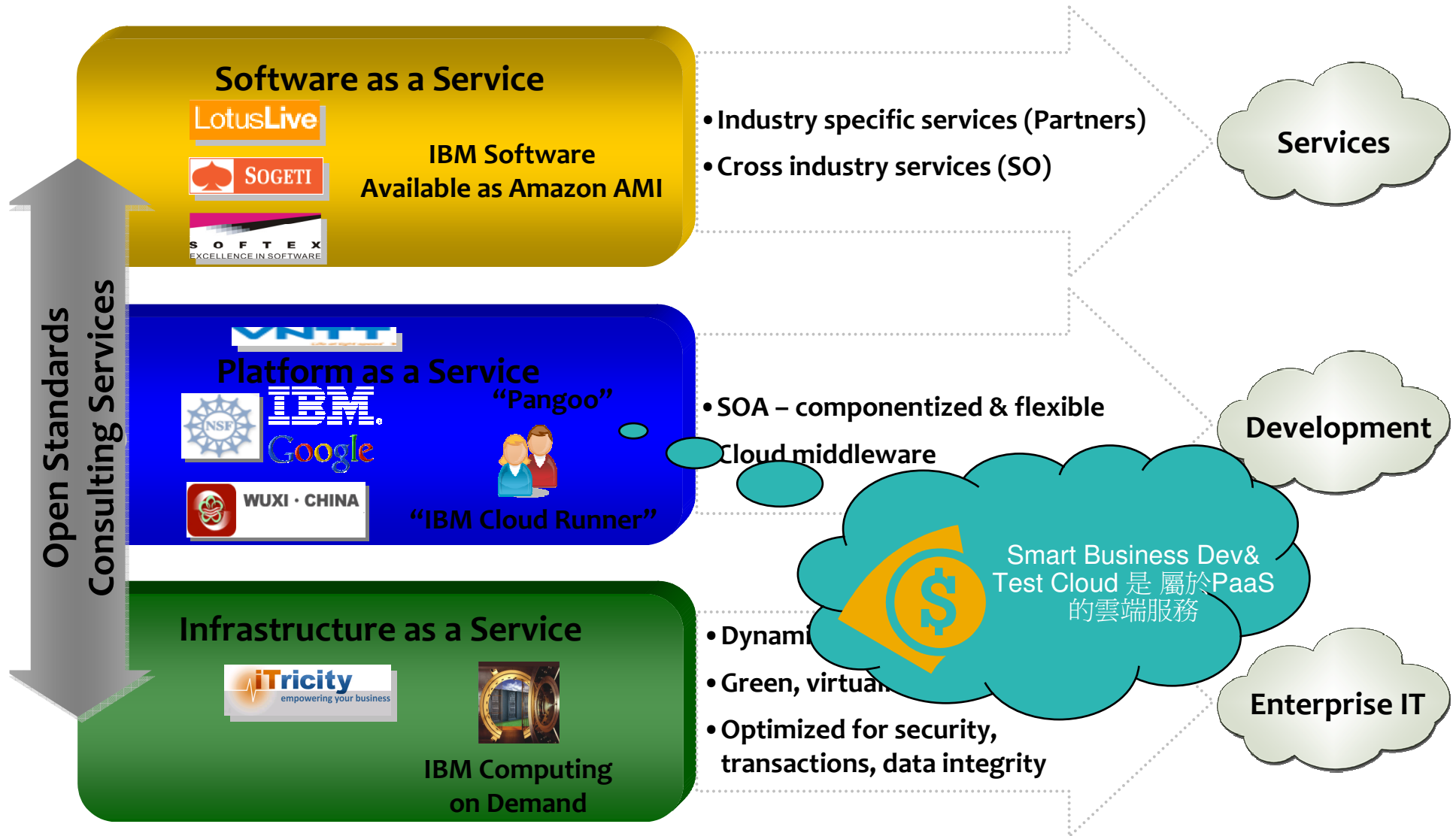
Access by subscription.

....Standardization, capital preservation, flexibility and time-to-deploy



**GOVERNANCE**

# On-ramps to Cloud Computing Services



# The Cloud

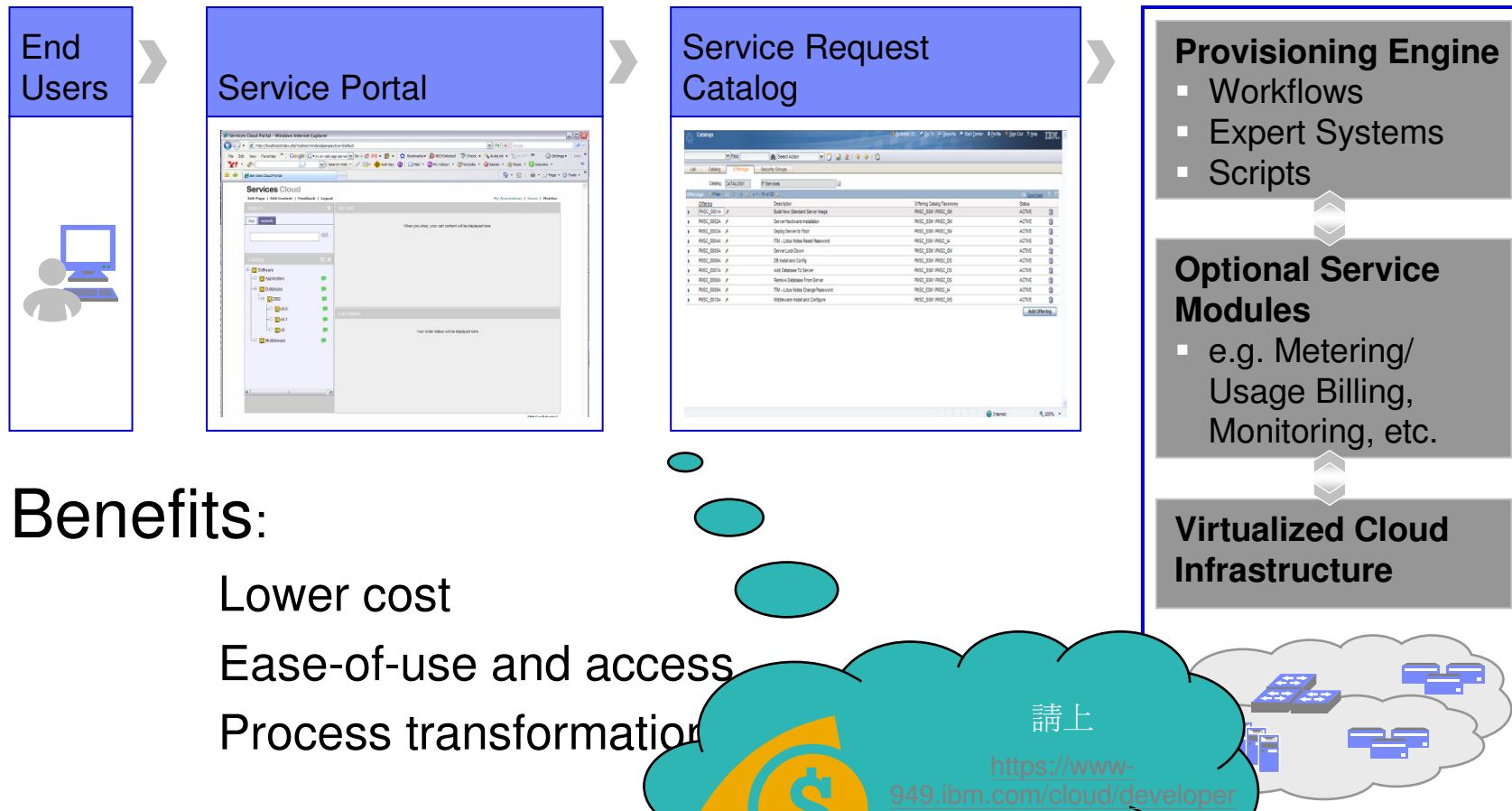
“**Cloud**” is a new consumption and delivery model inspired by consumer Internet services.

## Cloud enables:

- Self-service
- Sourcing options
- Economies-of-scale



# “Self-service” Drives Process Standardization



## Benefits:

- Lower cost
- Ease-of-use and access
- Process transformation



IBM Smart Business Welcome Joseph Chang | Sign out

## Development & Test

Overview | **Control panel** | Account | Support | About

Instances | Images | Storage View Asset Catalog →

Find instance by tag name:  →

Current filters: None

Instance name	OS	IP	Running	Created on	Status
Joseph DB2 Express-C	SUSE Linux Enterprise v10 SP2	129.33.195.144	32 Days	2009 12 28	Active
Joseph RAD	SUSE Linux Enterprise v10 SP2	129.33.195.147	39 Days	2009 12 21	Active
Joseph RQM	Redhat Enterprise Linux (32-bit) v5.4	129.33.195.186	8 Days	2010 1 21	Active
Joseph's RSA	SUSE Linux Enterprise v10 SP2	129.33.194.160	23 Days	2010 1 6	Active

### Getting Started

#### Connect to Your Instance

Use a FreeNX client to connect to the image

Login as dsktop, password passw0rd

#### Demonstration Guide

#### Image Details

- Rational Application Developer v7.5.2 with local(embedded) WebSphere Application Server (v7.0.0.3) Test Environment + Service Component Architecture Feature Pack and Web2.0 Feature Pack
- On provision, use FreeNX client to access the desktop (user: dsktop, password: passw0rd)
- For instructions, see the asset [Instructions for the IBM Software Delivery Services for the Cloud](#)

#### More about Rational Application Developer

[Discuss this image](#)



Joseph RAD [Change name] Expires: 2010-02-10 12 Days [Extend]

+ Reboot instance   - Delete instance   + Create image

**OS:** SUSE Linux Enterprise v10 SP2  
**IP:** 129.33.195.147  
**Size:** MEDIUM  
**Hostname:** vm324.developer.ihost.com  
**Image:** Rational Application Developer  
**Storage:** Not available

**Access:**  
 → Generate key pair  
 → Instructions

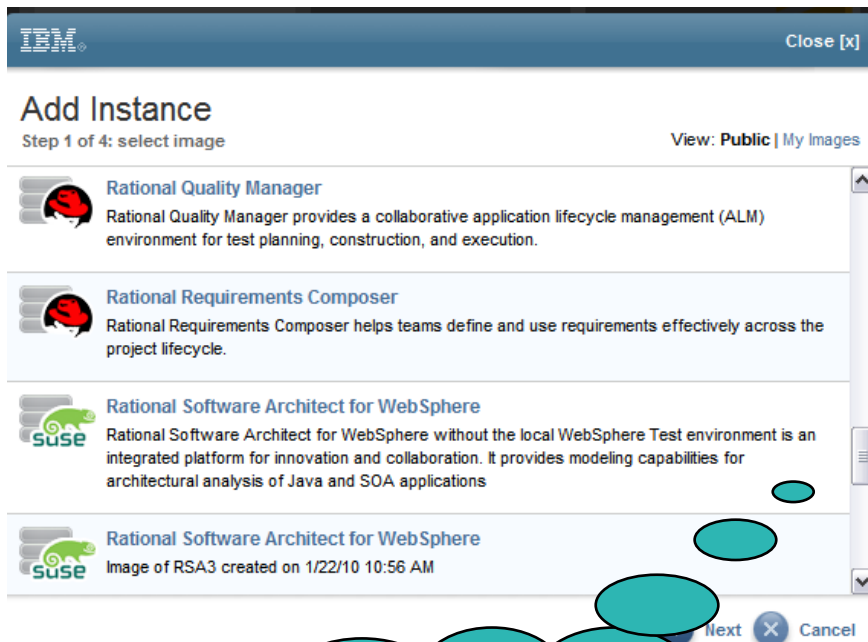
**Instance tags:**  
 +

Type	Notifications	Date
✖	Instance save failed	2010-01-18 12:18
✖	Instance save requested	2010-01-18 12:14
●	Instance active	2010-01-17 09:24
↓	Instance starting	2010-01-17 09:24

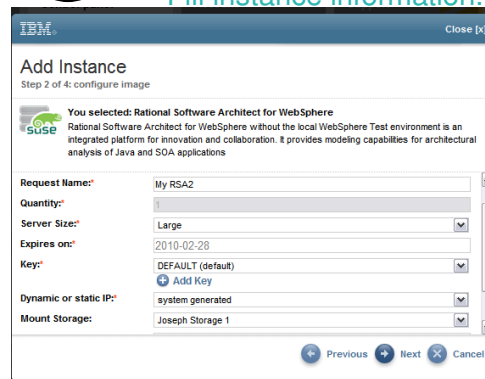


# Add new Instance

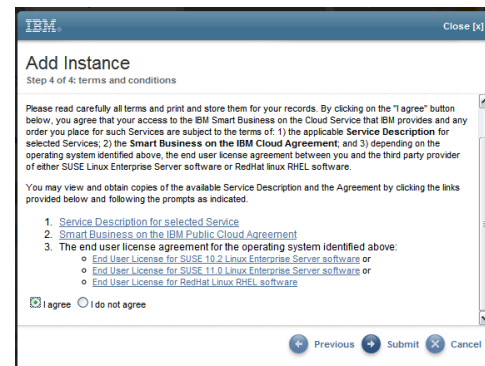
1 Select an image to provision.



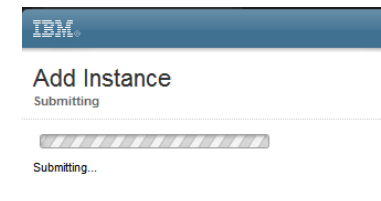
2 Fill instance information.



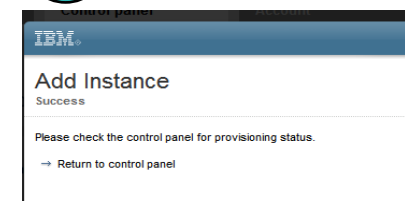
3 Confirm license Agreement.



4 Creating instance.



5 Done.



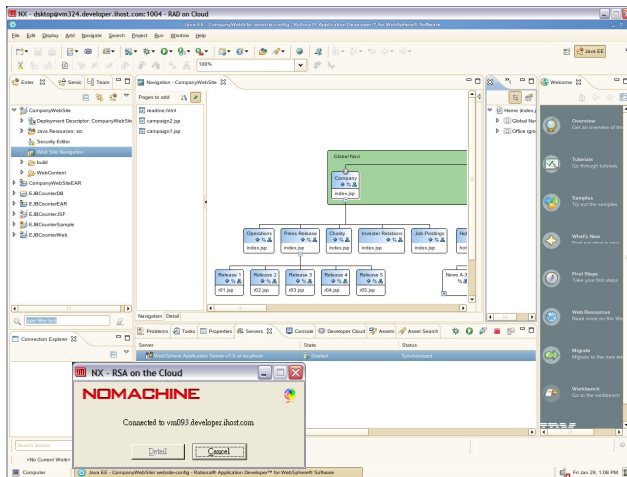
化繁為簡的步驟，讓開發團隊生產力完全爆發

詳細的Rational 雲端產品請見最後2頁

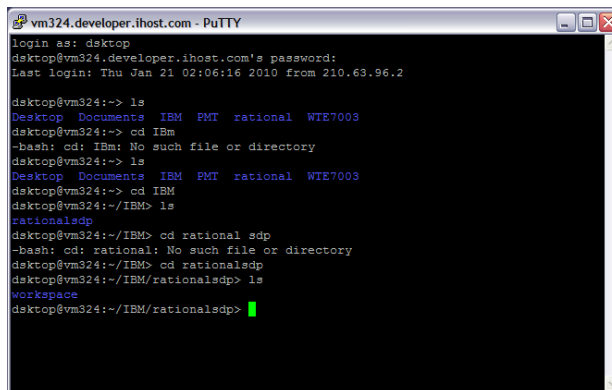


# Connect to Your Image

Use NoMachine to connect desktop applications.



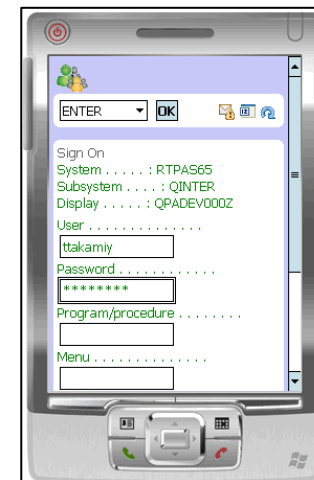
Use PuTTY to connect servers on the cloud.



Use Brower to connect applications on the cloud.



Use Mobile Phone to connect applications on the cloud.



# Manage Image with RAM

## (軟體上架、改版、再上架)

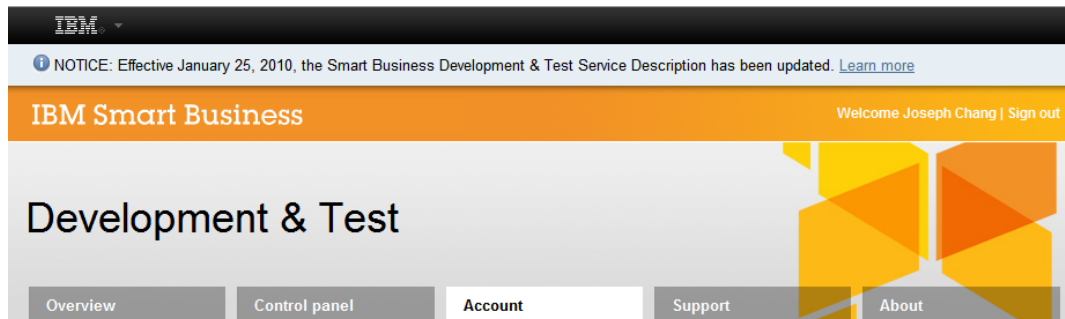
The screenshot shows the IBM Rational asset catalog interface. At the top, it says "IBM Smart Business" and "Rational asset catalog for Development & Test on the IBM Cloud". The user is logged in as "changhs@tw.ibm.com". The main content area displays a search for "Developer Cloud" assets. A table lists several assets with their names, versions, statuses, communities, ratings, and update dates.

名稱	版本	狀態	社群	評比	修改日期
Rational Quality Manager	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/28
Rational Application Developer	1.1	Approved	Cloud Computing Core Community	★★★★★	2010/1/28
Rational Software Architect for WebSphere	1.1	Approved	Cloud Computing Core Community	★★★★★	2010/1/28
Lotus Forms Turbo 3.5.1	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/22
Small System Size	1.0	Approved	Cloud Computing Core Community	★★★★★	2009/7/24
Rational Build Forge Agent	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/19
Rational Asset Manager 7.2.0.1	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/20
WebSphere sMash	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/19
Informix Dynamic Server Developer Edition	1.0	Approved	Cloud Computing Core Community	★★★★★	2010/1/19



# Security

IBM Smart business Development & Test Cloud provides security access control to your image.



## Account

Name: Joseph Chang  
 Email/User ID: changhs@tw.ibm.com  
 Company/Affiliation: N/A  
 → Change password

## Usage

**Your account**  
 Active instances: 4  
 Storage units: 2

**Global**  
 Users: 452  
 Instances: 876  
 Storage units: 302

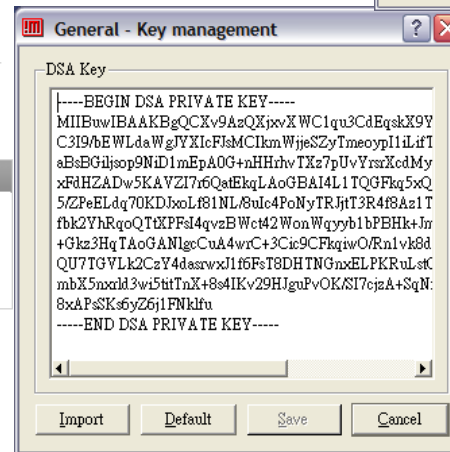
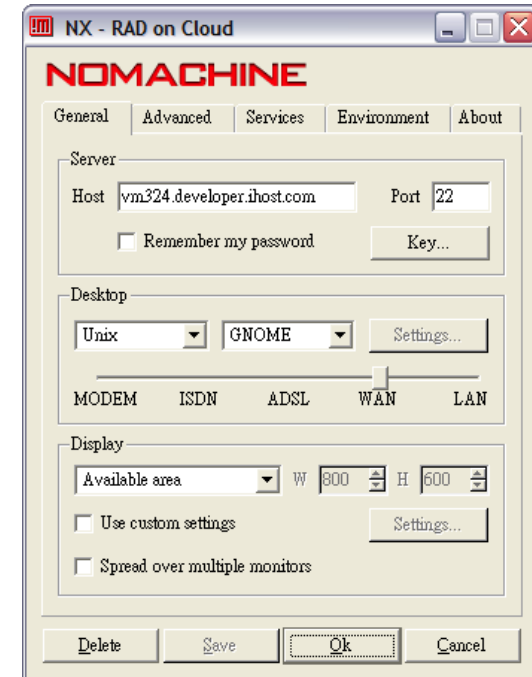
## Search

## Access

More Information

Name	Modified on	Instances	Actions
DEFAULT (default)	2009 12 10	Joseph RAD Joseph DB2 Express-C	Edit   Delete

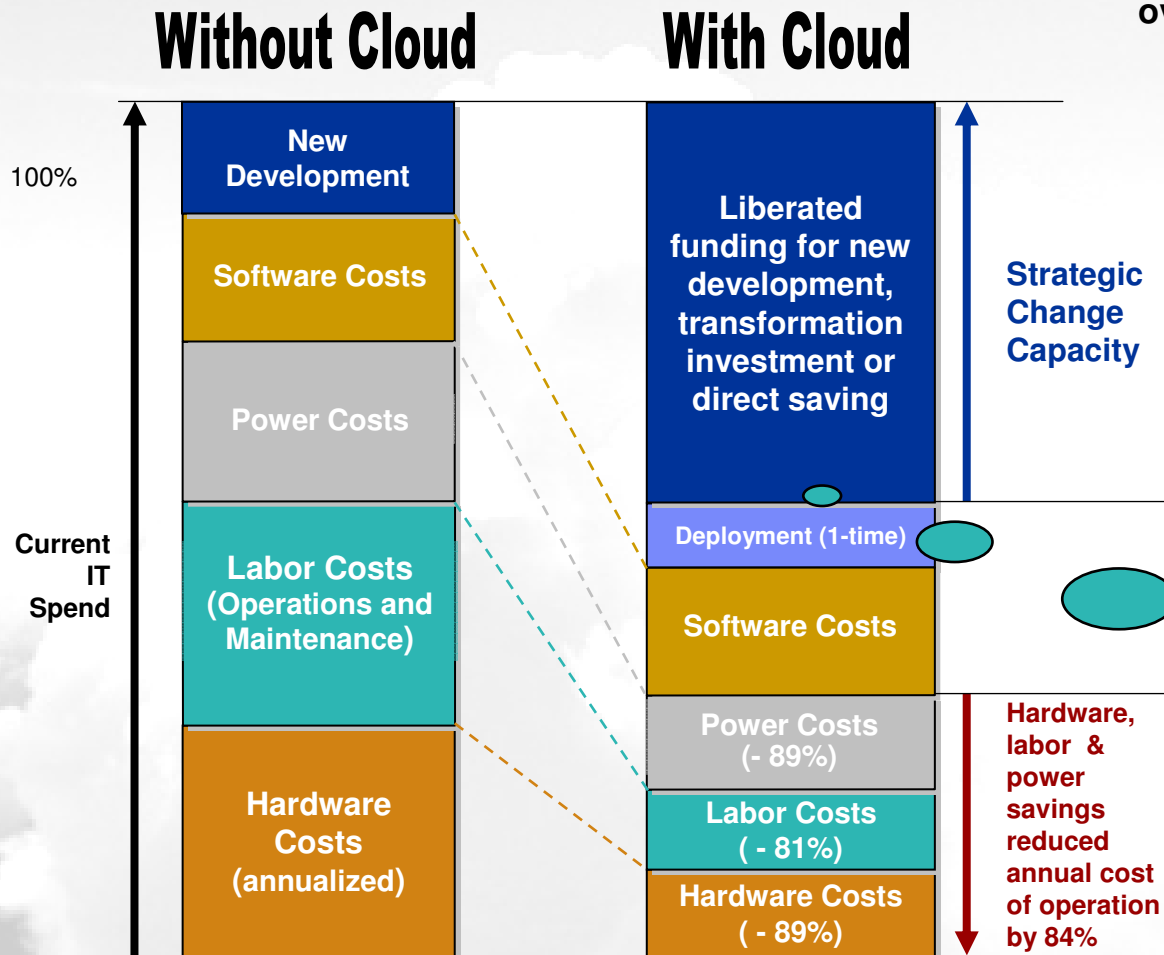
Change default key Add key Generate new key



## Benefits of Cloud Exploitation

Based on IBM's Technology Adoption Program (TAP)

This "collaboration innovation cloud" has over 80,000 participants within IBM working together to develop new innovations



**Reduced Capital Expenditure**

**Reduced Operations Expenditure**

**Additional Benefits**  
 Reduced risk, less idle time, more efficient use of energy, acceleration of innovation projects, enhanced customer service



# IBM Cloud Computing Offerings

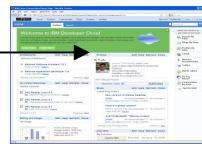


# Developer & Tester Cloud

- Create Project Team Environment in 10 mins



1. User logs in the developer cloud through the cloud logging portal.



2. User selects the virtual image for the tool required in the RAM catalog and agrees with T&Cs



3. User selects and rents the server and storage required for the service based on his/her needs



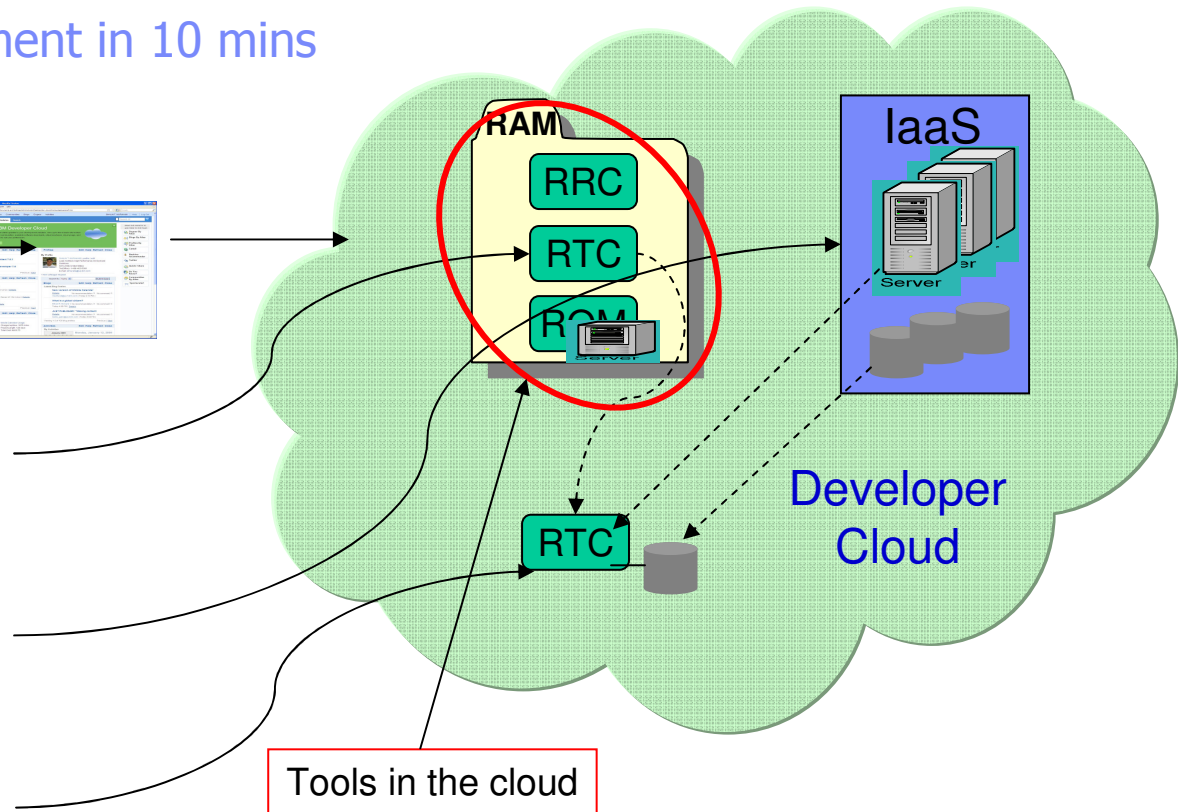
4. User requests the provisioning of the selected tool on the selected HW in the cloud



5. User can use tools to simplify, automate and govern software delivery for his development team



6. When service is completed, user deprovisions the service, returning the HW for other users



**Instant Access**

**Best Practices encapsulated in the virtual image**





# Developer & Tester Cloud

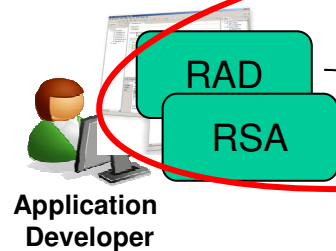
-- Create Developer Working Environment in 10 mins

- The Developer Cloud includes an image for Portal Server indexed in RAM that is to be used on-demand for testing the Portal application
- RAFW bridges the gap between development IDE and Portal Server running in the Developer Cloud

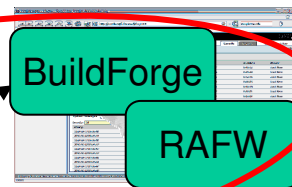
2. An RAFW automated process is launched that ensures that the target Portal Server image is started within the Developer Cloud.

1. Portlet developer makes modifications to a portion of the Portal Application and checks changes in to the project SCM

### Development Tools



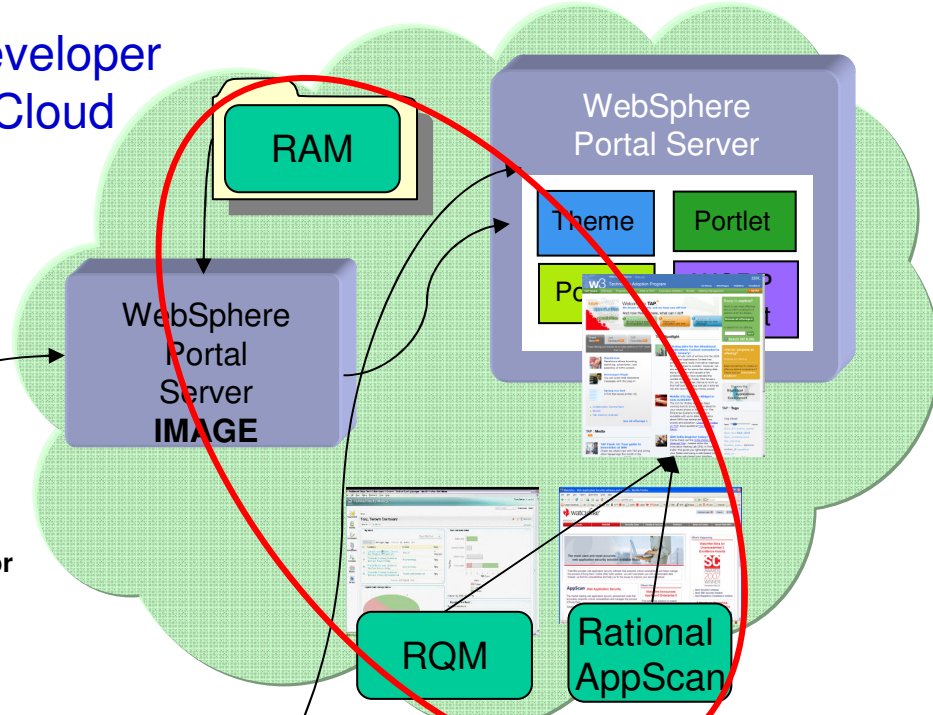
### Rational Build Forge & Rational Automation Framework for WebSphere



3. The RAFW automated process builds the portal application changes into a solution release package

Tools for the cloud

### Developer Cloud



4. The RAFW automated process deploys the solution release package on to the Portal Server running in the Developer Cloud

5. Testing and validation is performed against Portal application to detect quality problems and potential security vulnerabilities using RQM and AppScan services in the cloud

Tools in the cloud

From weeks to less than one day....

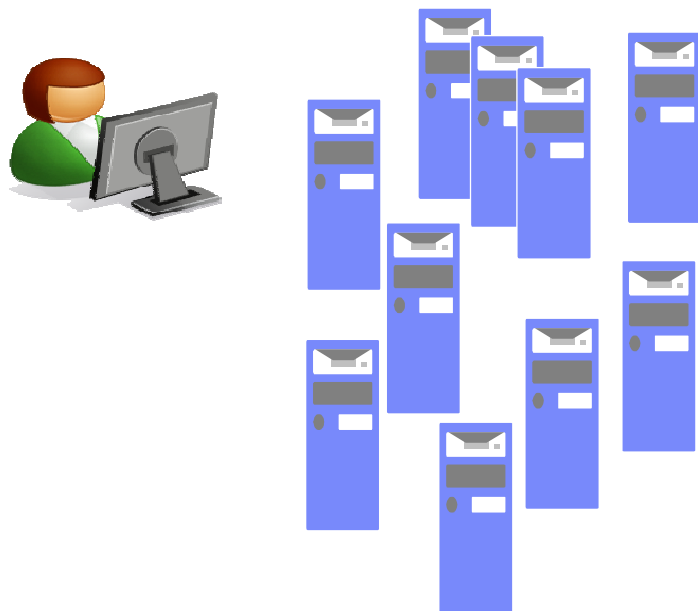


## Making current test environments more productive, agile and dynamic

*Current typical test environment with large number of test servers, little virtualization, and primarily manual allocation and configuration of individual test environments*

### Current

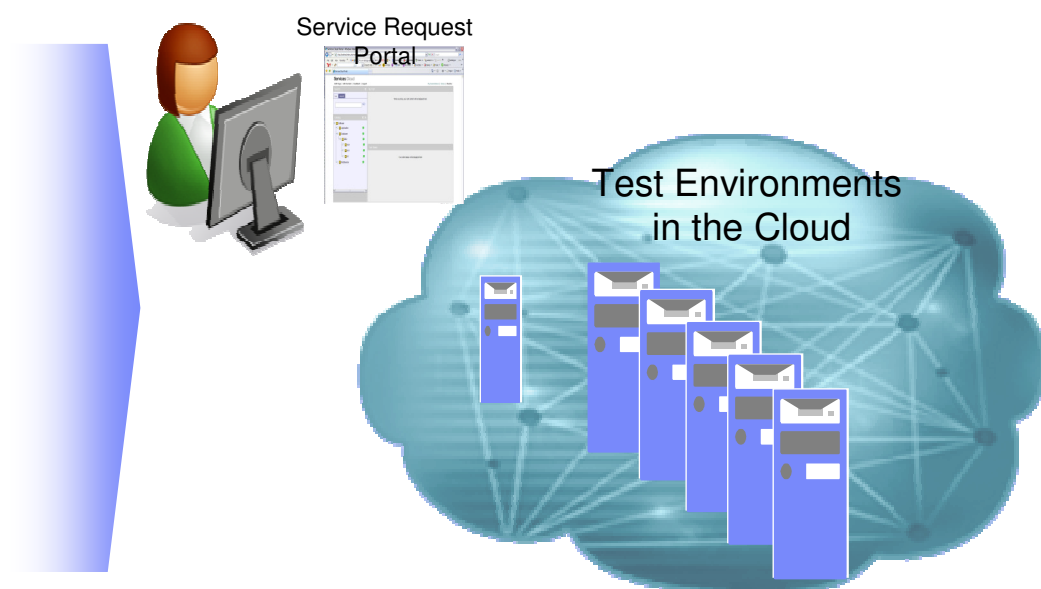
設備太貴不夠用，環境設定繁複 → 測試偷工減料



*Manual Scheduling,  
Provisioning & Configuration*

### To Be

虛擬設備，一次設定，自動化流程 → 高品質軟體



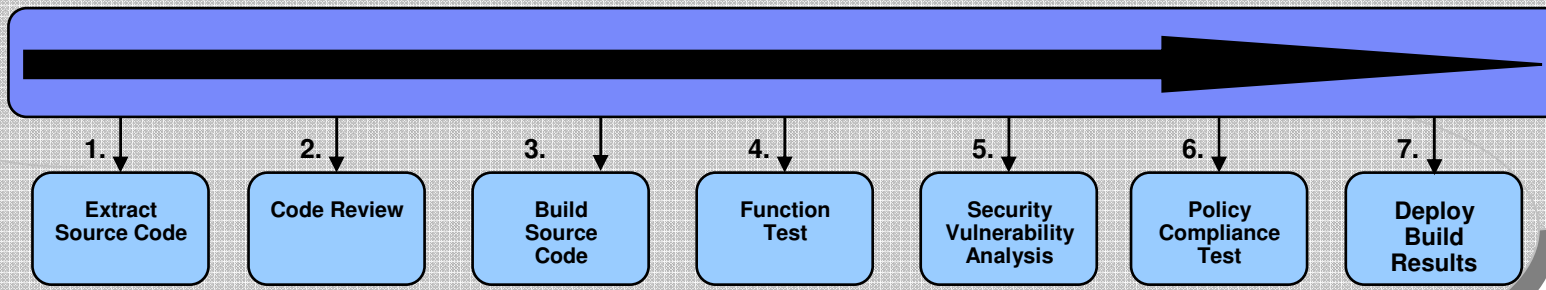
*Automated Request Driven Scheduling,  
Provisioning & Configuration of HW, OS, Middleware and Apps.  
Automated Tracking, Monitoring and De-provisioning.  
Virtualization Management, Capacity, and Image Management*

**Capital & Operational Expense Reduction, Defect Reduction, Increased Productivity & Innovation**



# Reduce Software Delivery Costs through Clouds

Dynamically obtain and use IT resources from the Cloud to execute automated software development tasks



## Manual



**Pre-1900 assembly**  
Highly skilled craftsmen manually building the entire product with custom parts

## Early Assembly Line



**Early assembly line**  
Skilled workers assembling pieces of parts to build a finished product

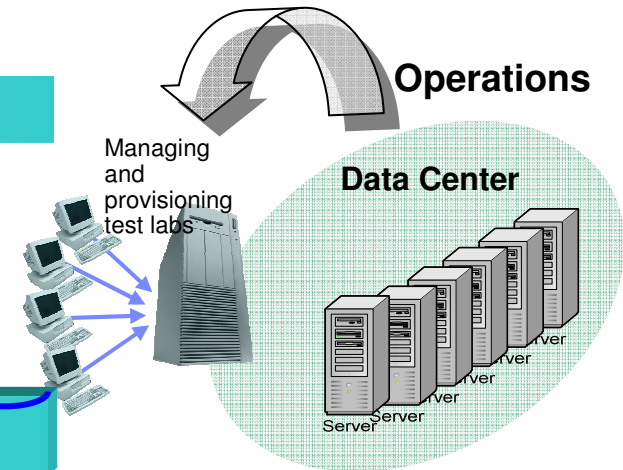
## Modern Factory



**Modern factory**  
Highly automated with diverse and geographically distributed workforce using a global supply chain

Software development today

Can we be more like this?



# Create PayPal Application

-- with IBM Smart Business Developer and Test Cloud

- Step 1 選取X.COM 開發桌面, 填寫請求表格

The screenshot displays two overlapping windows from the IBM Smart Business Developer and Test Cloud interface. The background window, titled "Add Instance" (Step 1 of 4: select image), shows a list of available images. The "X.COM - CCC - CE" image is selected. The foreground window, titled "Add Instance" (Step 2 of 4: configure image), shows the configuration details for the selected image. The "Request Name" field is filled with "Paypal Adaptive Payment Samp". Other fields include "Quantity" (1), "Server Size" (Bronze), "Expires on" (4/8/10), "Key" (generated), and "Dynamic or static IP" (system generated). Navigation buttons for "Previous", "Next", and "Cancel" are visible at the bottom.

**Add Instance**  
Step 1 of 4: select image  
View: Public | My Images  
Select Data Center: US North East: Southbury, CT

- SUSE Linux Enterprise Server 11.0 (32-bit) - GTS
- SUSE Linux Enterprise Server 11.0 (64-bit) - GTS
- WebSphere Application Server 7 Fix Pack 7 (32-bit) WAS 7.0.0.7 32 bit image
- X.COM - CCC - CE**  
Image of X.COM - CCC - CE

**Add Instance**  
Step 2 of 4: configure image  
You selected: X.COM - CCC - CE  
Image of X.COM - CCC - CE

Complete the fields to configure your instance selection. Required fields are indicated with an asterisk (\*).

Request Name: Paypal Adaptive Payment Samp

Quantity: 1

Server Size: Bronze

Expires on: 4/8/10

Key: generated

Dynamic or static IP: system generated

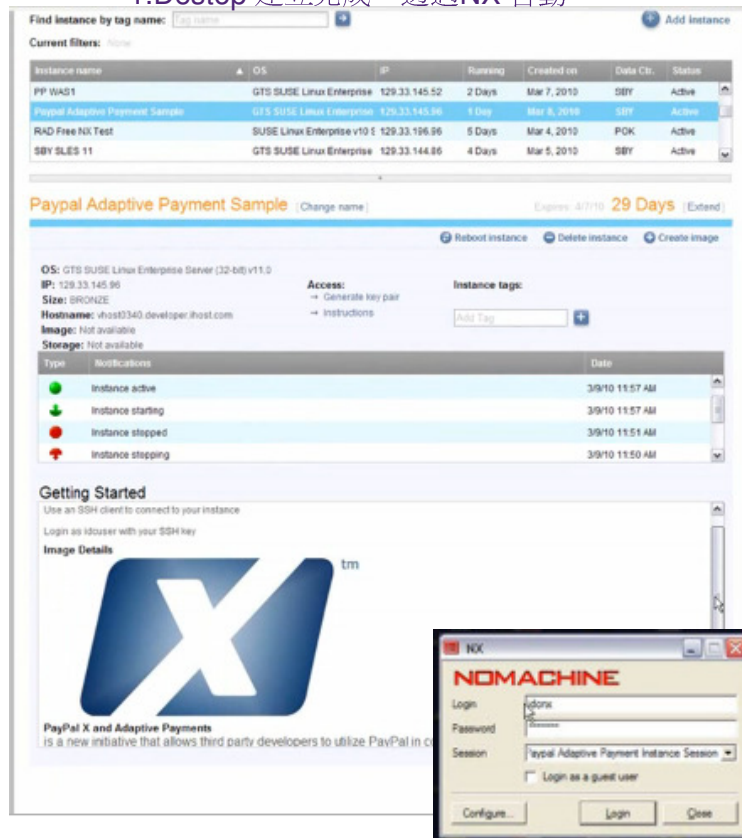
Previous Next Cancel

# Create PayPal Application

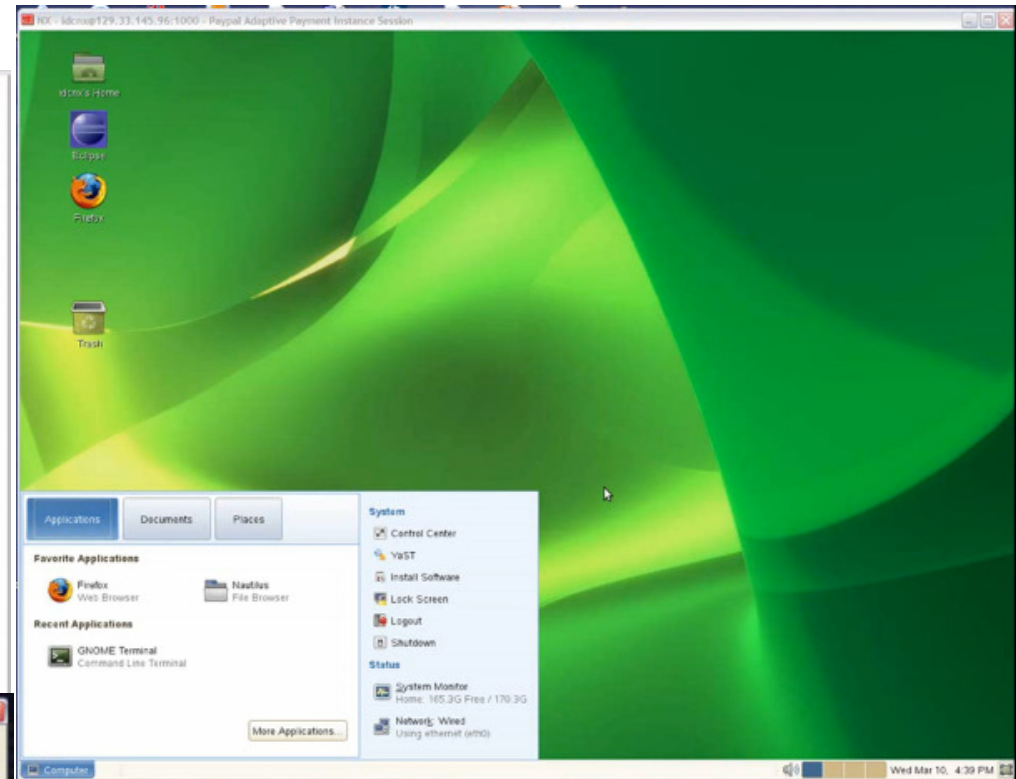
-- with IBM Smart Business Developer and Test Cloud

- Step 2 依指示 啟動X.COM 開發桌面

1. Destop 建立完成，透過NX 啟動



2. 啟動後的桌面

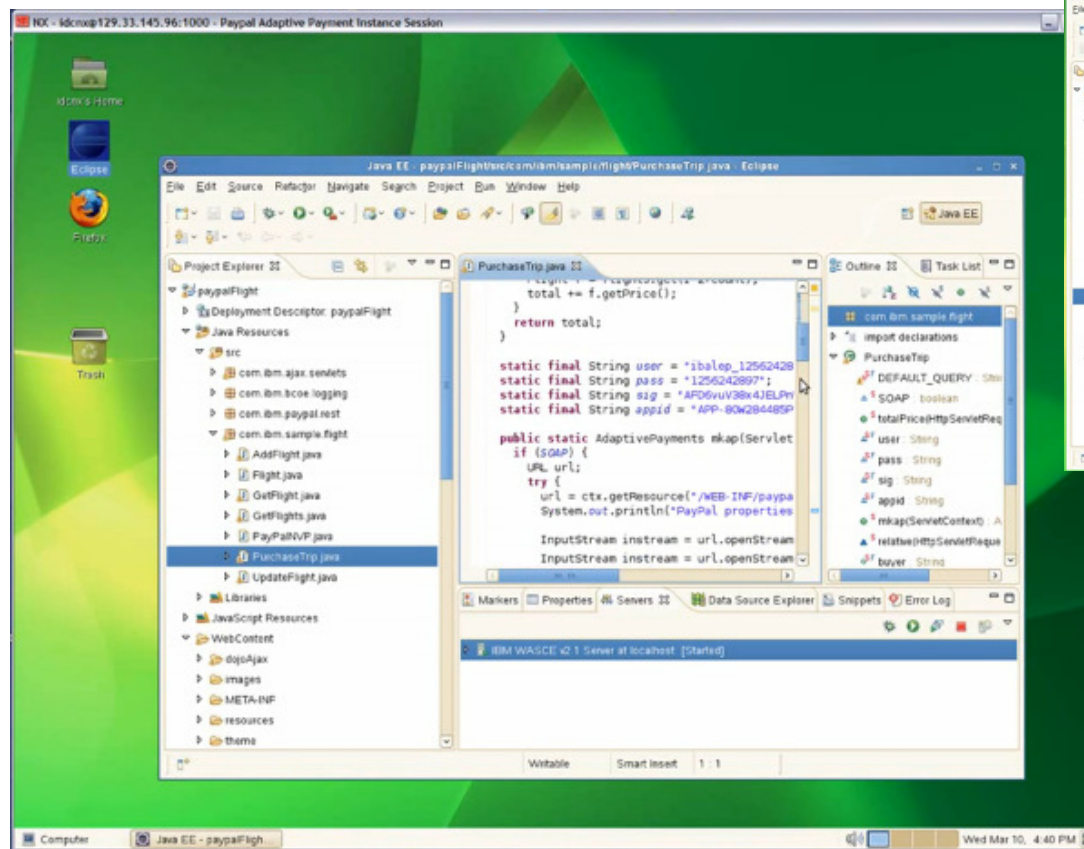


# Create PayPal Application

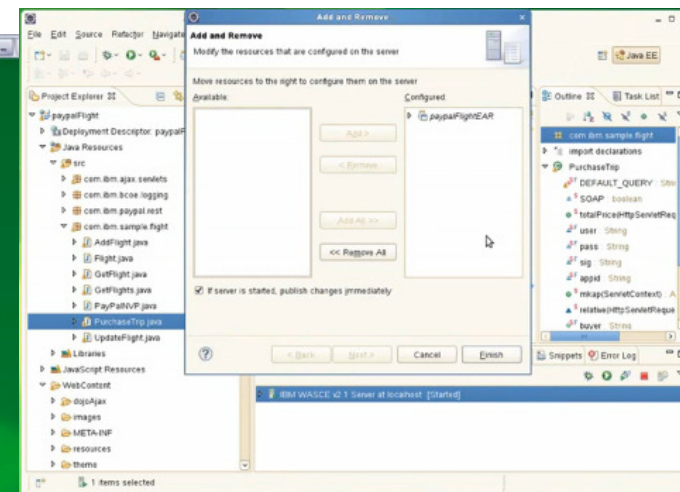
-- with IBM Smart Business Developer and Test Cloud

## Step 3 啓動PayPal Application 開發工具

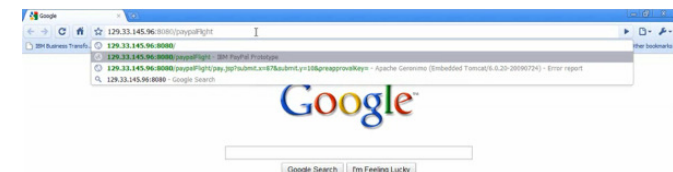
1.啓動 Eclipse. PayPal SDK, 範例程式階在裡面



2.部署應用程式，AP Server 當然也在雲端



3.連線到應用程式(手機模擬器)



# Create PayPal Application

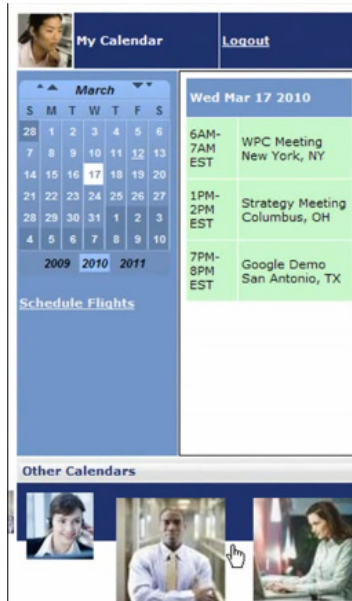
-- with IBM Smart Business Developer and Test Cloud

## Step 4 測試應用程式執行

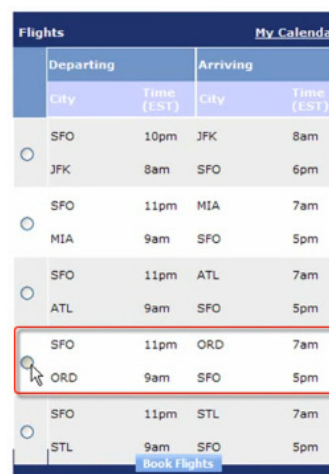
1. 啟動手機Calendar



2. 選擇出發日期



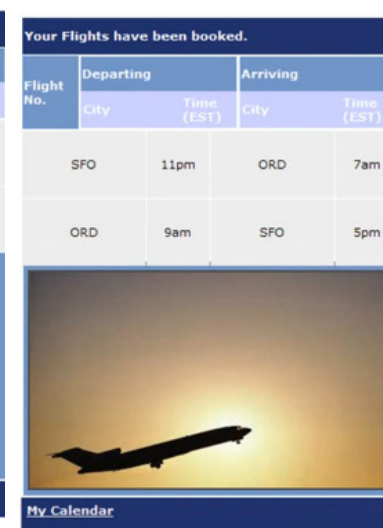
3. 選擇航班



4. Place Order



5. 完成





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