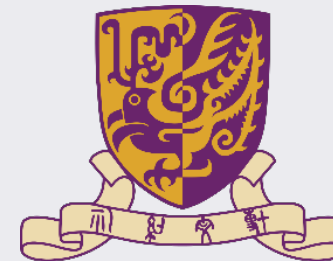# 在小學有效運用雲端電腦以促進電子學習

Centre for the Advancement of Information Technology in Education,
Hong Kong Institute of Educational Research
The Chinese University of Hong Kong

第二節流程安排

- 課後作業討論
- Google Classroom 學習管理系統使用介紹
  - 動手實踐和深入的討論： Google Classroom
- 學員討論：在學校的 Public Cloud vs. Private Cloud
- 小休
- 設置公共雲系統的實現與教學實例
  - 動手實踐和深入的討論：VMWARE
- 總結

GOOGLE CLASSROOM

建立您的
第一個課程！

歡迎使用 Classroom!

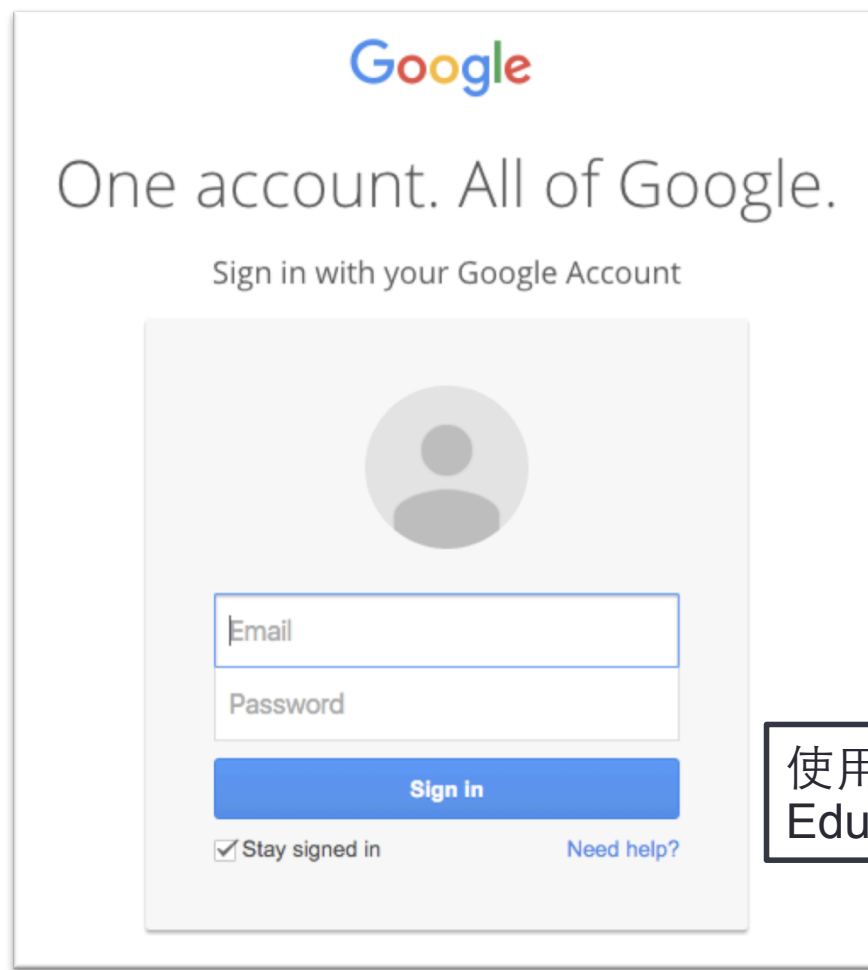Classroom 可讓您與班上學生交流互動，並輕鬆分享作業、教材和訊息。

Introduction

- Google Classroom 並不是一個全功能的 LMS, 很多管理功能也欠奉
- 但 Google Classroom 界面簡單清楚, 容易使用
- 在 Google Classroom 裡上載的檔案都是儲存在 Google Drive 內, 並且透過 Google Drive 分享給其他老師和學生
- 要使用 Google Classroom, 學校必須先成功申請使用 Google Apps for Education

概覽

	Google Classroom 功能 ／ 主要內容	
帳戶管理 – 老師和學生帳戶管理	不用登記，Google Apps for Education 內建功能	
操作介面簡介	課程主頁	Google 我的帳戶
建立網上教室	課程	
加入其他參與者 (學生，老師)	課程代碼	
管理學習教材及發佈消息	公告 訊息	教材
收集學生功課及評分	作業	
管理學習進度		
了解和評估學生的學習情況		
互動和協作功能	問題	
其他功能		
應用程式界面體驗	Push Notification Updates	

操作介面簡介

http://classroom.google.com

使用 Google Apps For Education 帳戶登入

操作介面簡介

未有建立課程
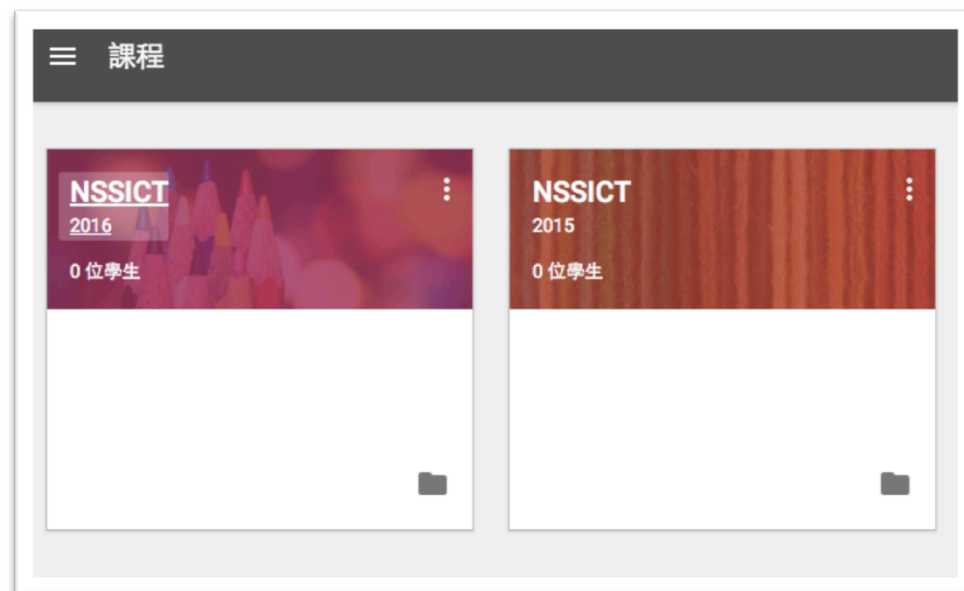
先前已建立課程

Google 我的帳戶

· 如果要更改戶口設定（e.g 語言），可直接到 Google 我的帳戶作出更改

建立網上課程

- 可使用建立課程

加入其他參與者 (學生，老師)

- 可輕易使用課程代碼讓學生加入課程
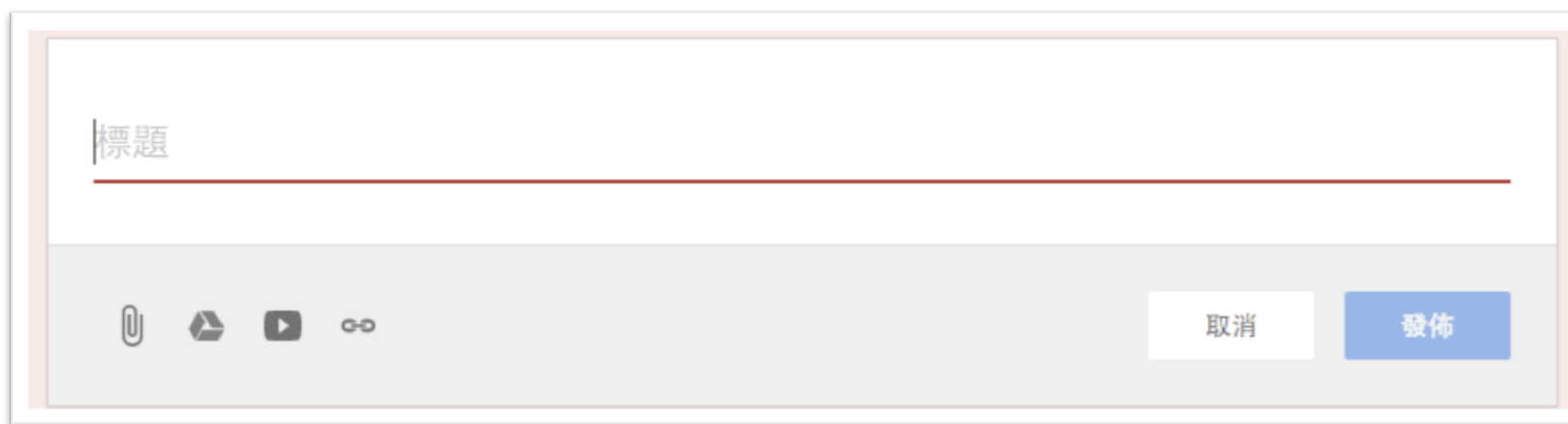
加入其他參與者 (學生，老師)

管理學習教材及發佈消息

- 在 Google Classroom 裡, 所有檔案及教材都會自動存放於 Google Drive
- Google Classroom 會在 Google Drive 設立一個專用資料夾

管理學習教材及發佈消息

- 老師可以直接透過 Google Drive 分享學習教材
- 老師也可以透過 Google Classroom 上載教學資源

管理學習教材及發佈消息

- 在 Google Classroom 內**可以發佈**公告
- 學生可以在訊息串(Stream)中看到老師所發佈的公告
- **老師可以在發布公告時附加檔案及其他連結**
- **老師仍可以同時把信息發佈到多個課程**
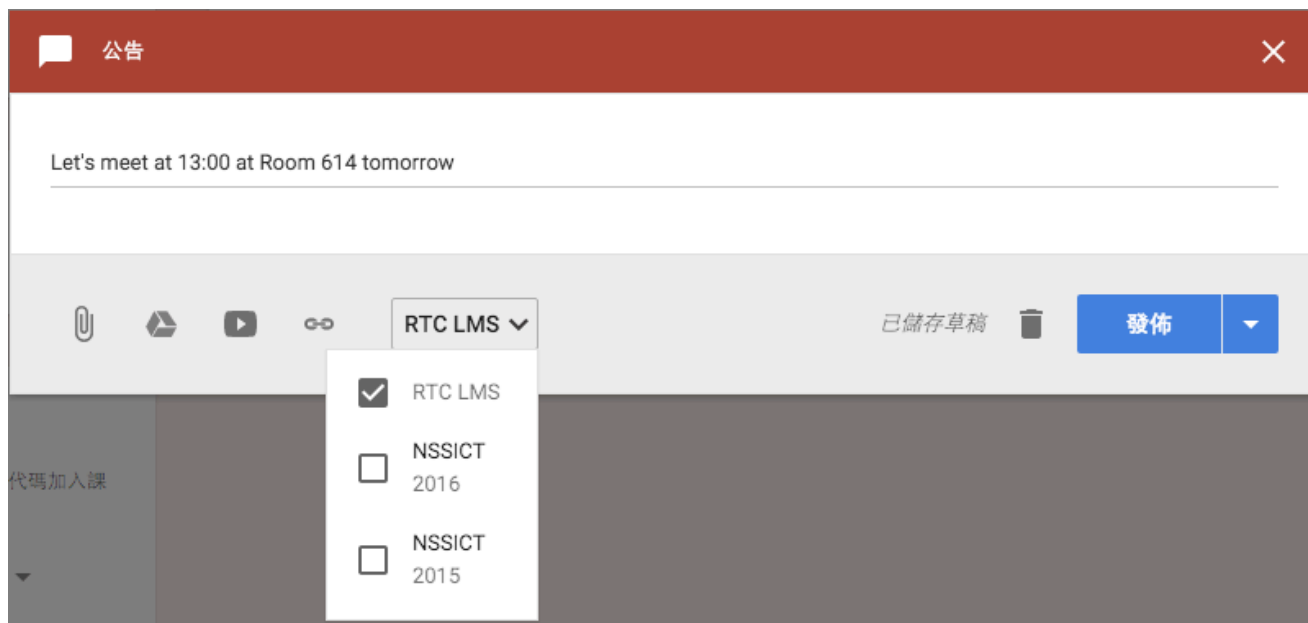
管理學習教材及發佈消息

- 老師可以設定學生的權限, 決定是否讓學生也可以發佈消息

收集學生功課及評分

- 發佈作業跟發佈消息差不多

收集學生功課及評分

- 學生登入後可以見到功課收集和公告

收集學生功課及評分

- 學生可以從電腦或Google Drive上載檔案
- 學生也可以直接使用Google Docs / Slides / Sheets 建立文件並遞交功課

收集學生功課及評分

- 老師可以查看學生功課及作出評分

互動和協作功能 – 問題

- 老師亦可以透過訊息串發佈問題, 讓同學之間互相討論

THE ROUTES IN YOUR JOURNEY

Private Cloud

Hybrid Cloud

Public Cloud

Hosted Private Cloud

On-Premise/Internal

Off-Premise/Service Provider
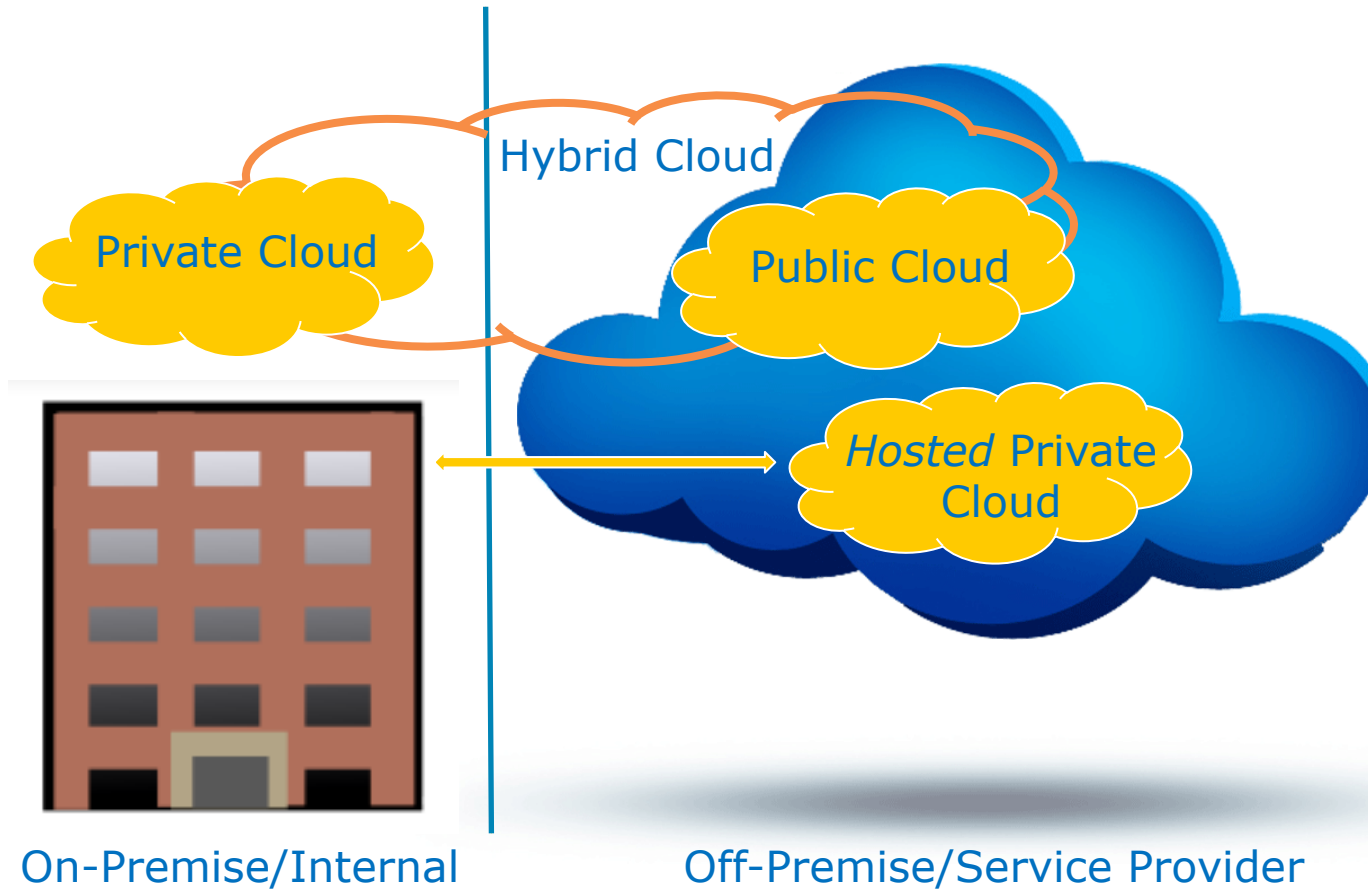
PUBLIC CLOUD

- Public – Services or resources such as applications and storage offered over the public internet and available to anyone that wants to purchase the service. With Public Cloud, resources are shared between organisations for cost efficiency.

- Google mail, outlook.com are held in the 'public cloud'

PRIVATE CLOUD

- Private Cloud – Private cloud is a cloud infrastructure dedicated solely to a single organisation that is managed and hosted internally behind a firewall on private networks.

- What this means is that organisations are able to adapt more efficiently to web based demands and be more cost effective.

HYBRID CLOUD

- **Hybrid Cloud** – A hybrid cloud is a composition of two or more clouds that remain unique entities but are bound together, offering the benefits of multiple deployment models. A hybrid cloud is typically offered in one of two ways: a vendor has a private cloud and forms a partnership with a public cloud provider, or a public cloud provider forms a partnership with a vendor that provides private cloud platforms.

- *A hybrid cloud is a cloud computing environment in which an organisation provides and manages some resources in-house and has others provided externally.*

學員討論：
在學校的 PUBLIC CLOUD VS. PRIVATE CLOUD

Effective Use of Cloud Computing to Facilitate e-Learning

Toon-Chwee, Wee

2016

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Agenda

- What is Server Virtualization?

- Business Benefits

- Adoption Trend

- Demo

- HOL

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VMware Product Innovation

INNOVATION

Workstation

ESX SERVER

ESX Server

VirtualCenter

GSX Server

VMware ACE

VMware Server
VMware Player

VMware
Infrastructure

1st Data Center
Virtualization
Suite

1st Free Products
For First-time Users

1st w/ 64-Bit Support
1st Virtual SDK
1st VRM Solution

1st Virtual SMP
1st w/ VMotion
1st NSA-certified
Virtual Desktop

1st IA-32 Virtual
Machine (+ host arch.)
1st Intel-based
Hypervisor

2005-2006

2004-2005

2002 - 2003

1999 - 2001

CONSISTENT VIRTUAL HARDWARE PLATFORM

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VMware Technology Overview

Old Model: Traditional x86 Architecture

> Single OS image per machine

> Software and hardware tightly coupled

> Multiple applications often conflict

> Underutilized resources introduce real cost into the infrastructure

> Old model doesn't work anymore!

VMware Technology Overview
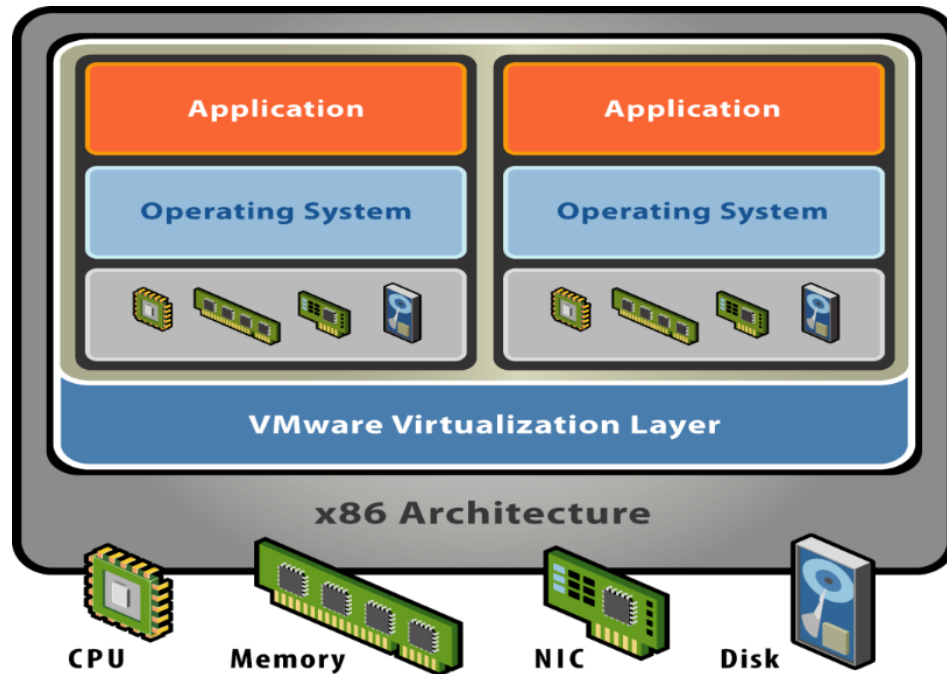
New Model: VMware Technology

> Separate OS and hardware – break **hardware dependencies**

> Manage OS and application as single unit by **encapsulating** them into VMs

> Strong fault and security **isolation**

> **Standard, HW independent** environments can be provisioned anywhere

> **Flexibility** to chose the right OS for the right application

> **Works with what you have today…**

Application + OS: Now a Data File

Entire server – OS, apps, data, devices, and state – is now simply a file.
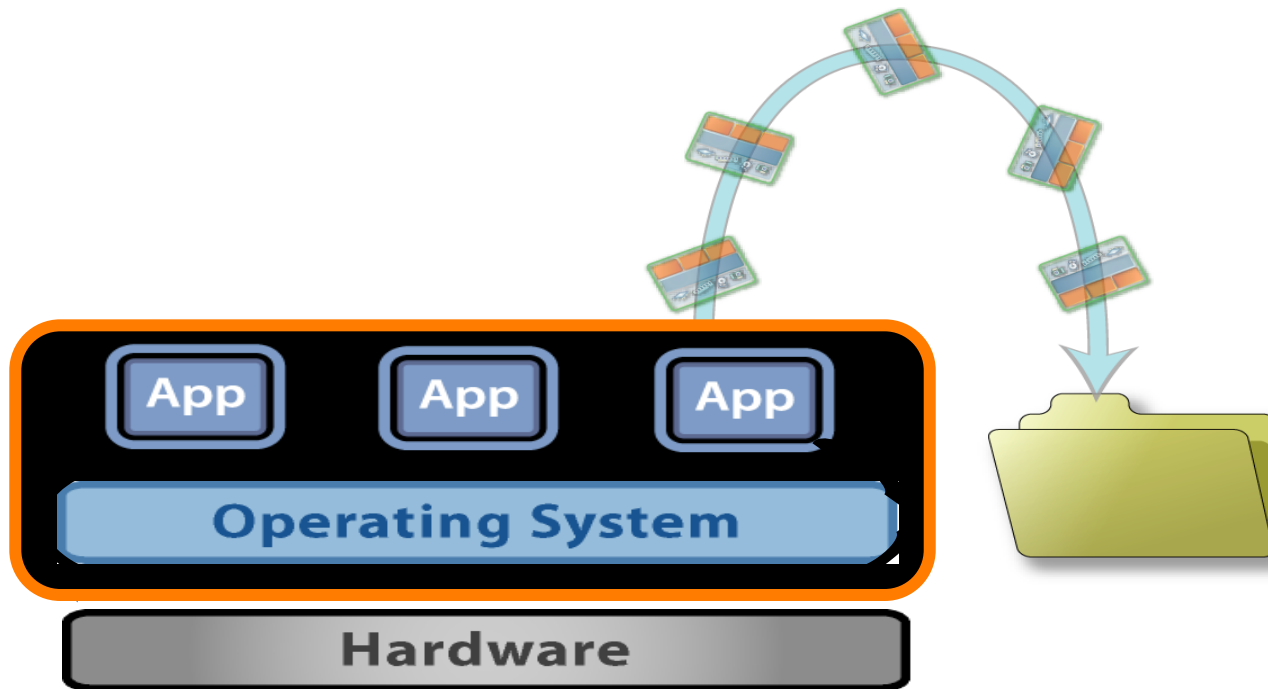
> Server provisioning is similar to copying a file

> Server migration is now similar to data migration

> Data management techniques can be used
for server management
- Server cloning/copying
- Versioning
- Server archival
- Remote mirroring

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Consolidation

Reduce the physical infrastructure footprint

Reduce capital and operational costs:
- **hardware**
- **power**
- **cooling**
- **floor space**

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Aggregation & Containment

vmware®
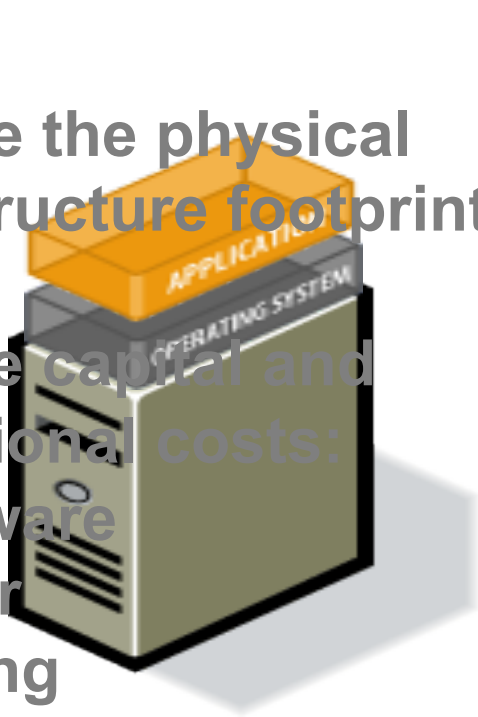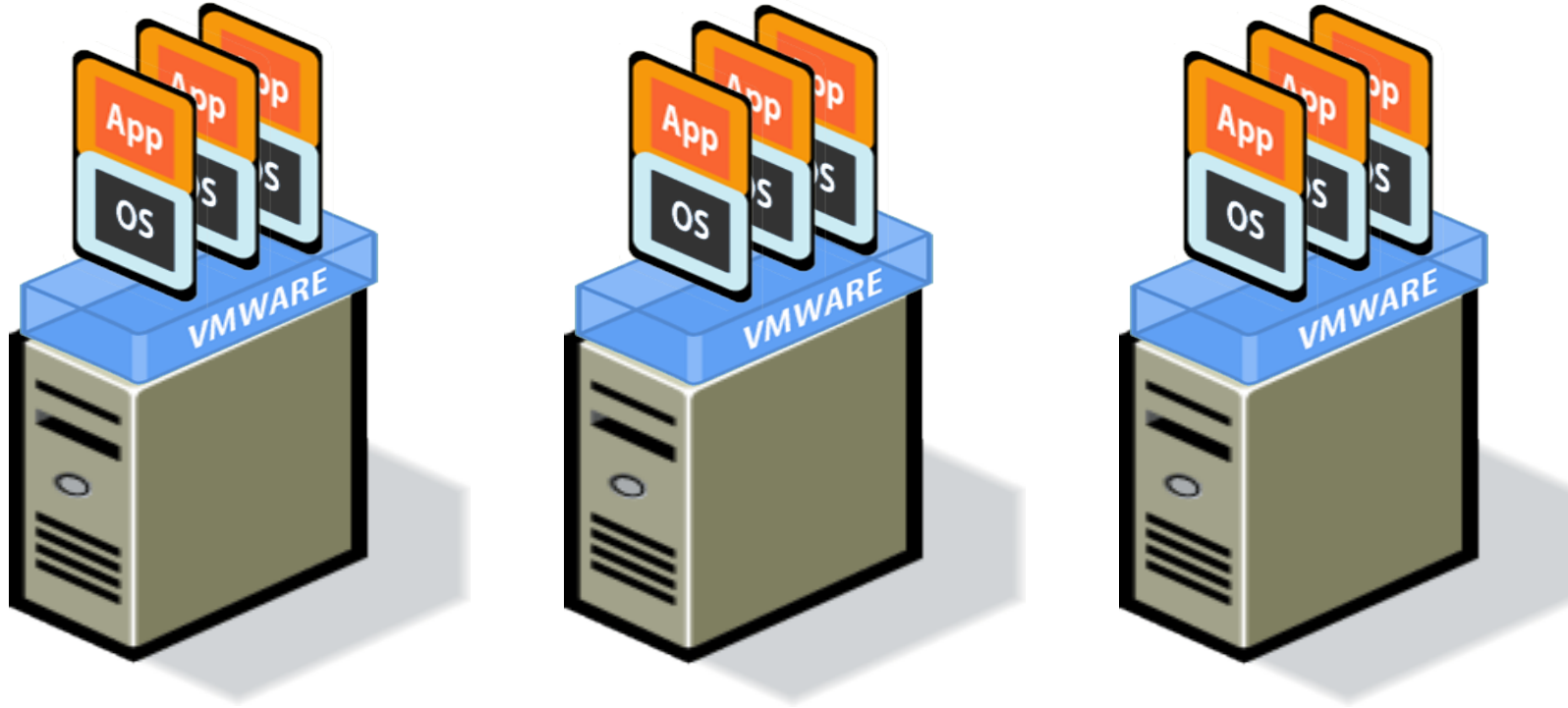
Aggregation & Containment
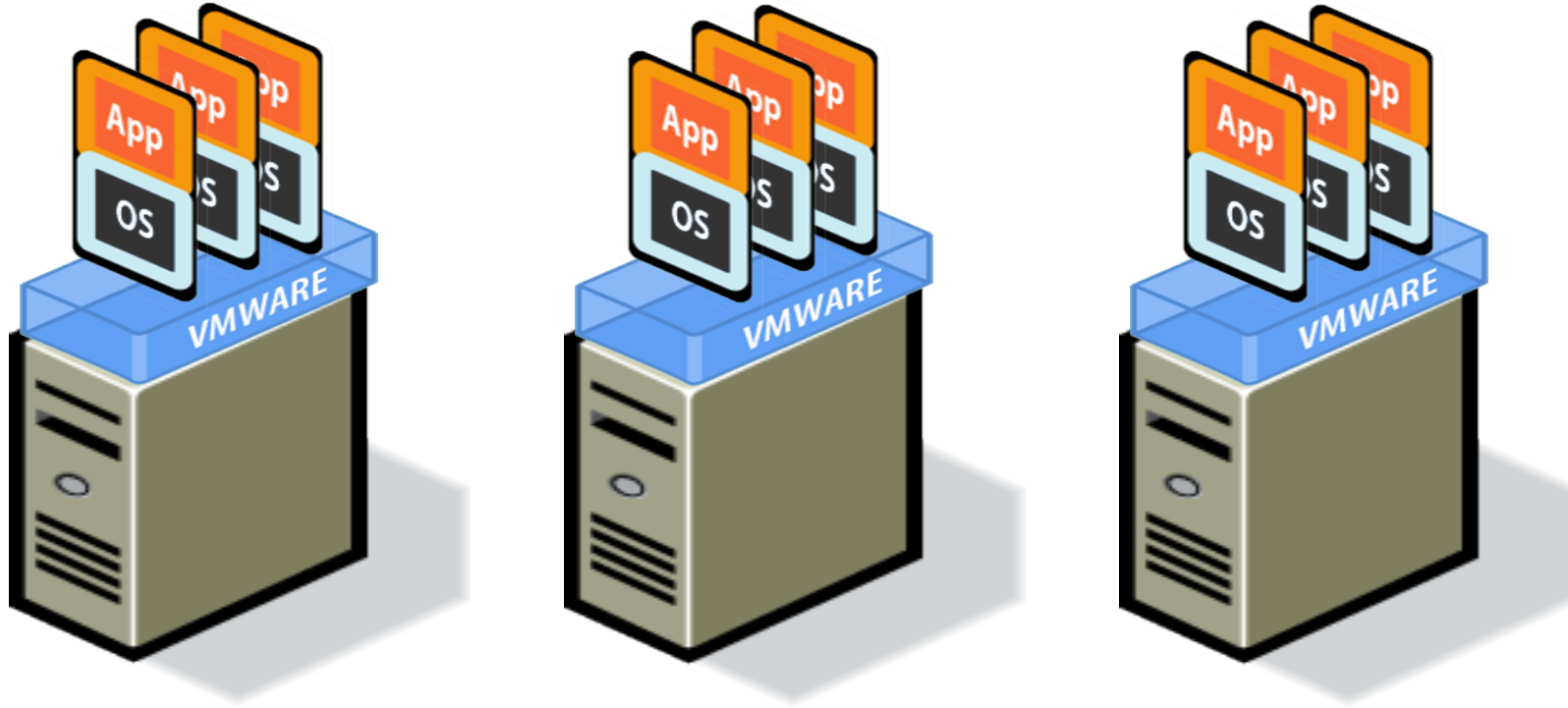
Virtual Infrastructure

Enables you to:

> Dynamically map computing resources to the business

> Lower IT costs through increased efficiency, flexibility and responsiveness

> Provision new services and change the amount of resources dedicated to a software service

> Treat your data center as a single pool of processing, storage and networking power

Virtual infrastructure brings uniformity to your data center

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Physical to Virtual (P2V) Migration

Seamlessly transform physical systems
into virtual machines with P2V Assistant
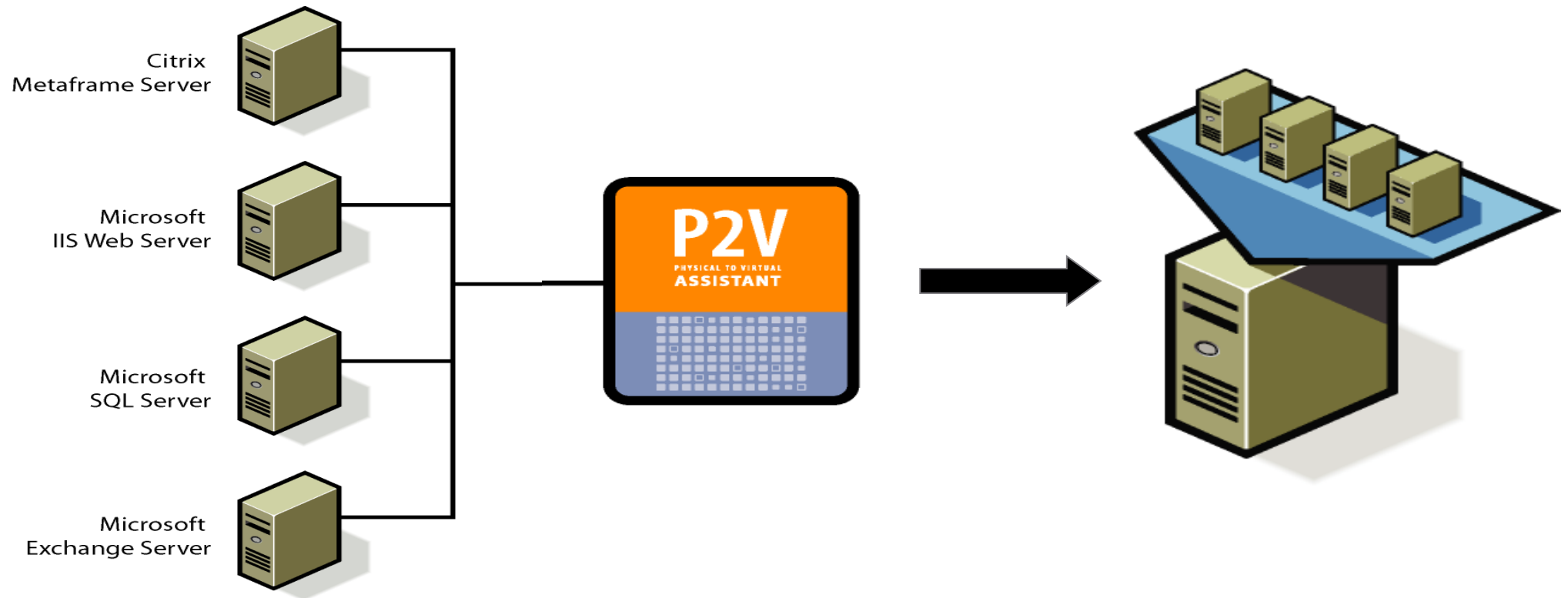
Large scale server consolidation

1200 Servers on 100 Physical Chassis

- **Utilization up to nearly 80%**
- **12:1 consolidation ratio**
- **20:1 Space reduction**
- **60% of x86 environment virtualized**
- **Staffing not increased in 2.5 years**
- **Provisioning reduced to hours from weeks**

QUALCOMM

Backup Server

Production VMs

Storage Reserve

DR - Site

Backup Server

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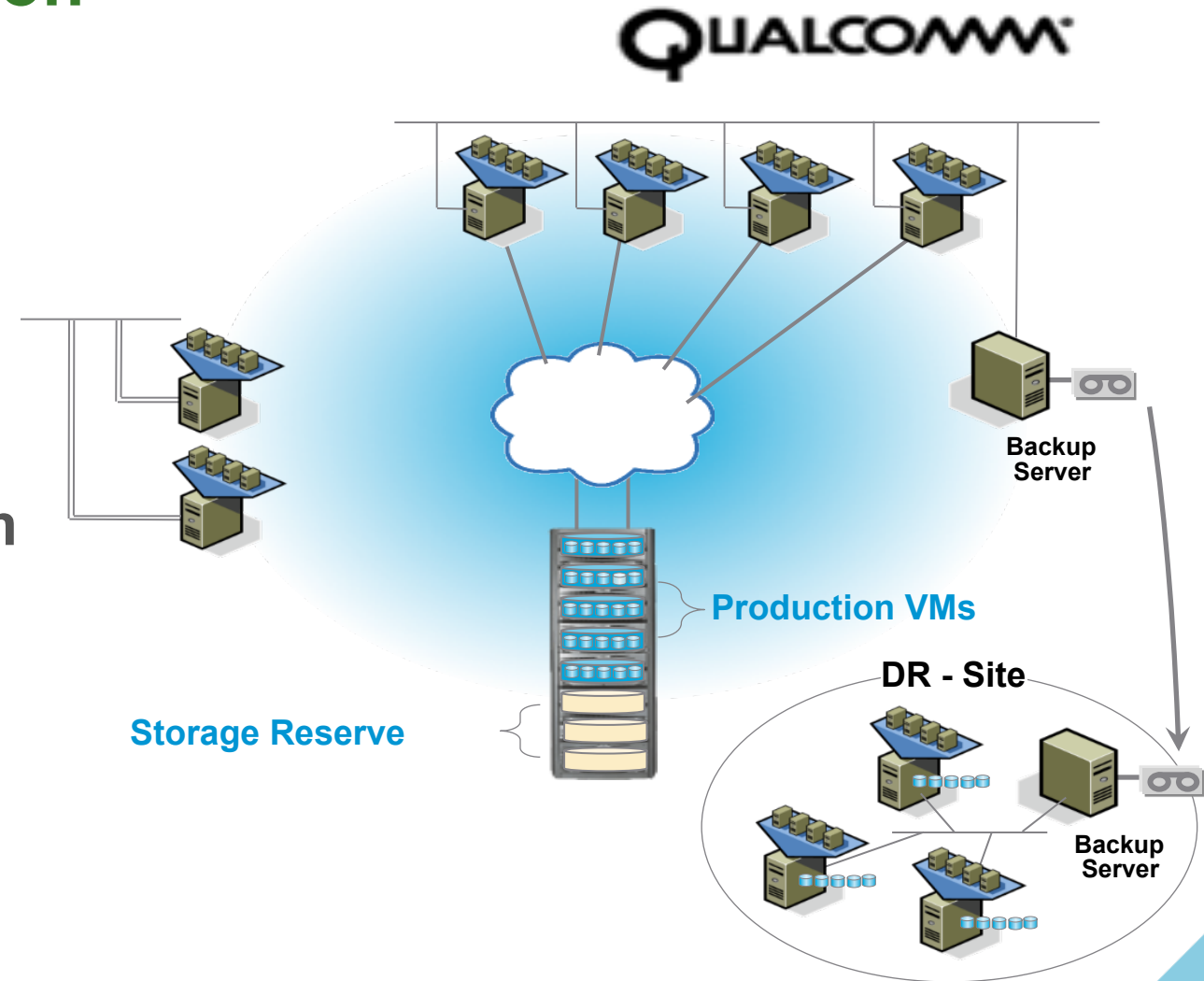
Business Benefits: Customer Impact

Simplify Operations

Increase Service Levels

Deploy Pervasively

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Virtualization Adoption

| Separate	Consolidate	Aggregate	Automate	Liberate
Test and Development	Server Consolidation	Capacity On Demand	Self-Managing Datacenter	Computing Clouds On and Off Premise

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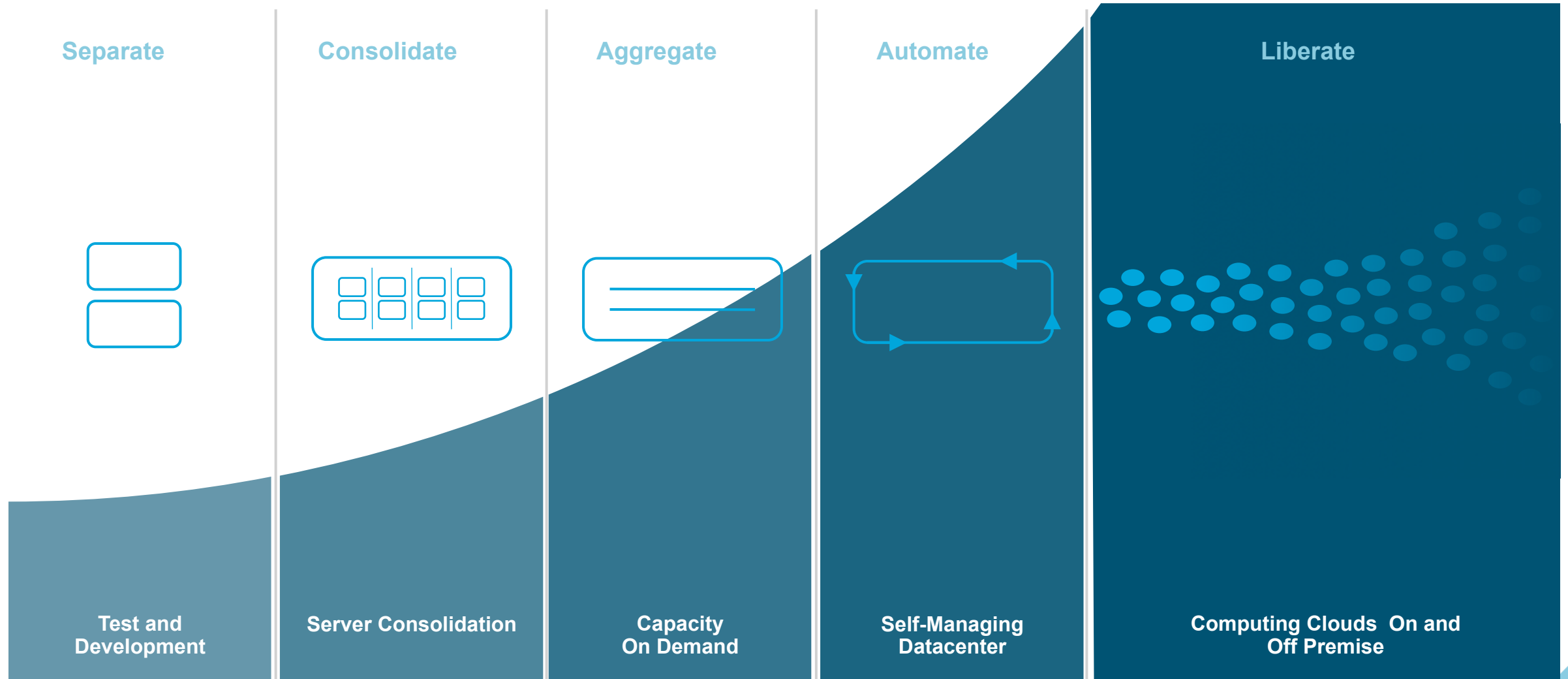
Next Step to Accelerate your Journey to Virtualization

vSOM (vSphere + Operations Management)

vSphere

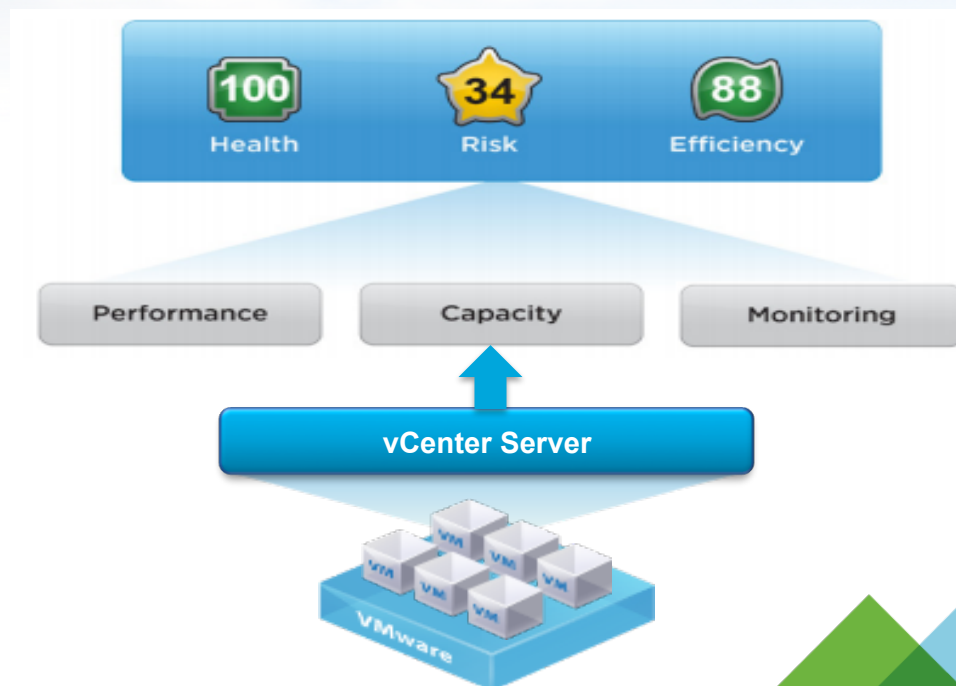**World's most reliable virtualization platform**

- Server consolidation
- Capex benefits
- High availability
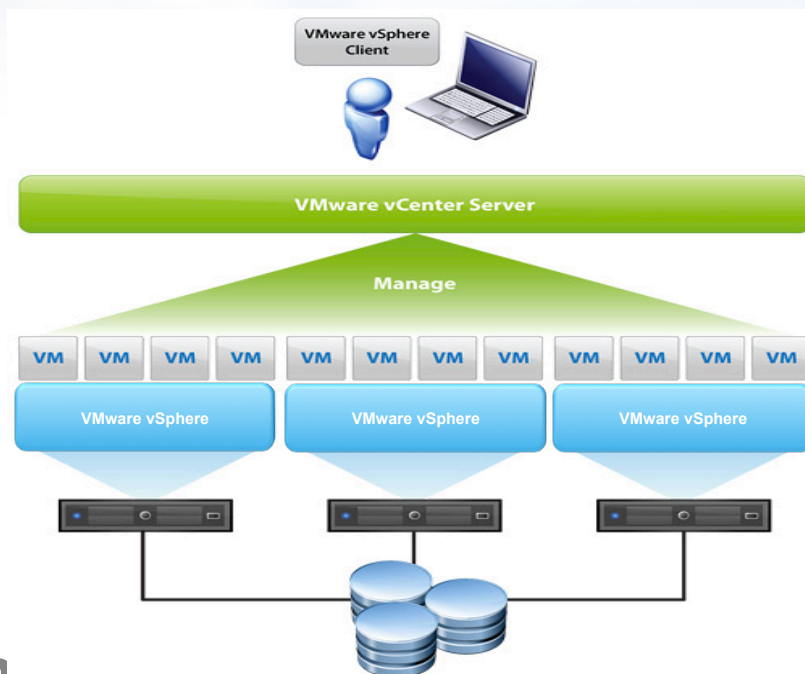
vCenter Operations

Powerful Automated Operations Management

- Capex Savings – Higher Server Density
- Lower operating costs
- Maintained SLA levels
- Gain control and visibility

VMware End User Computing

One login | One experience | Any device

Demo (End User Computing)

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Hands On Lab (45 min)

- **HOL-SDC-1610 Virtualization 101: vSphere with Operations Management 6**
- http://labs.hol.vmware.com/HOL/catalogs/catalog/123

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Thank you!

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總結

- 雲端電腦概述
- 學校採用雲電腦概述
- 討論：在學校使用雲端電腦的優點和缺點
- 設置公共雲系統的實現與教學實例
- 動手實踐和深入的討論：O365
- 動手實踐和深入的討論： Google Classroom
- 討論：在學校的 Public Cloud vs. Private Cloud
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