



校園雲起飛

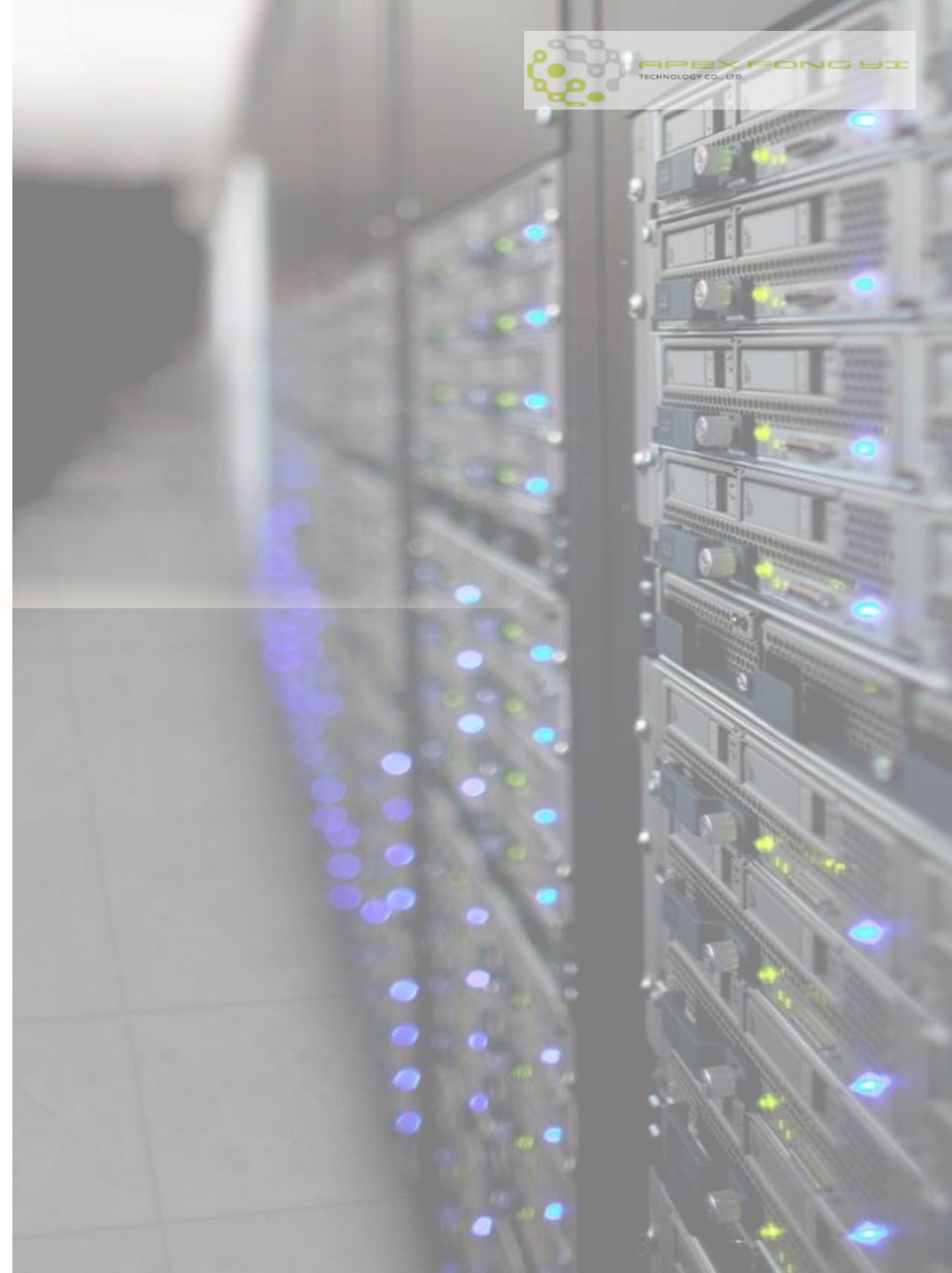
Jeff Sun / 孫嘉福



簡報大綱

1. 數位學習藍圖【U-Learning】
2. 【向上集中】的困難與挑戰
3. 全面化解決方案【NetApp Total Solution】
4. 結論【Why NetApp】

1. 數位學習藍圖 【U-LEARNING】



科技飛上雲端成為 一股改變教學的力量

U-
Learning

U:Ubiquitous

M-
Learning

M:Mobile

E-
Learning

E:Electronic

U-Learning 藍圖

隨處學習及提供多樣化學習環境，增進學生學習意願



MOOCS數位教學平台

開放的影音課程，提供不同地區的學生，擁有一樣的教



MOOCS翻轉教學



資源共享、向上集中、統一管理

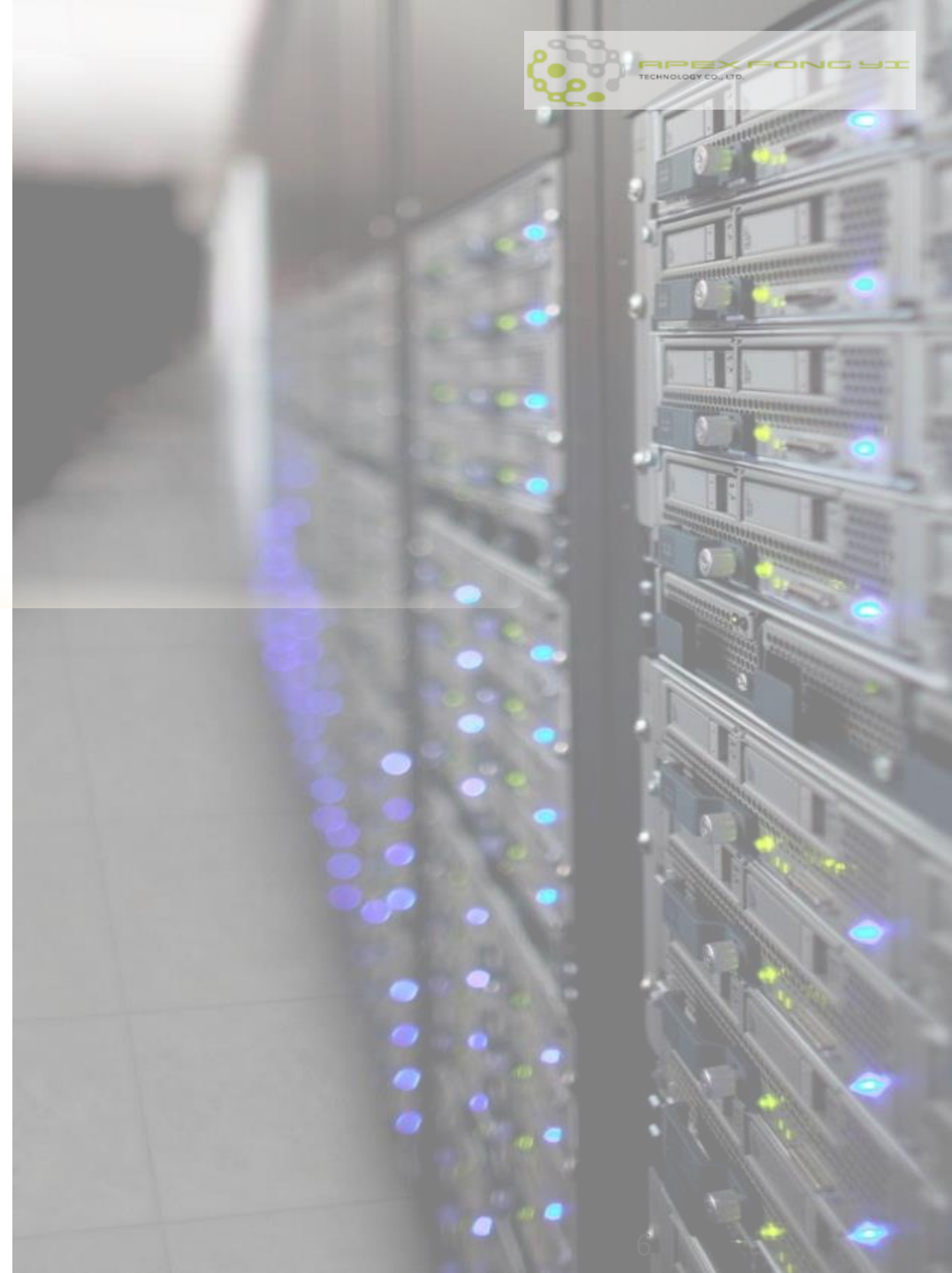
雲端電腦教室，提供了
Any Device、Anytime、Anywhere
的學習環境

雲端電腦教室

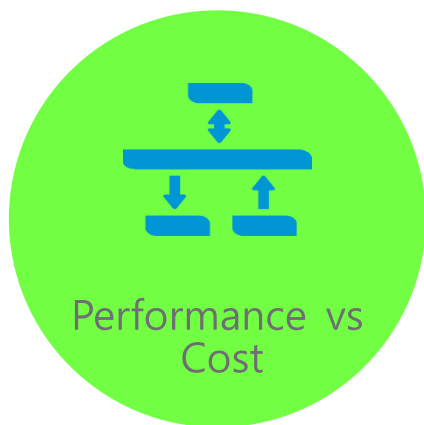
穩定完善的主機代管
AI教學不再遙不可及
各區校務系統穩定，可投入更多時間
創作發想。



2.【向上集中】的 困難與挑戰



資料中心三大挑戰



效能跟成本



資料系統的可靠性

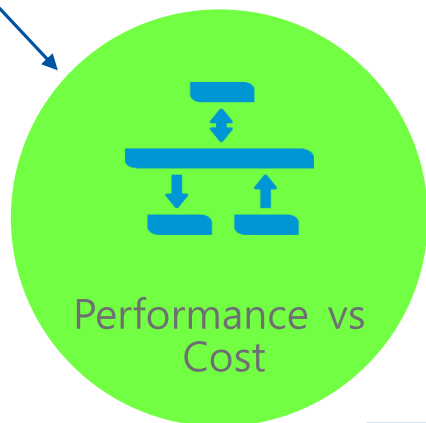


稽核及可視性管理



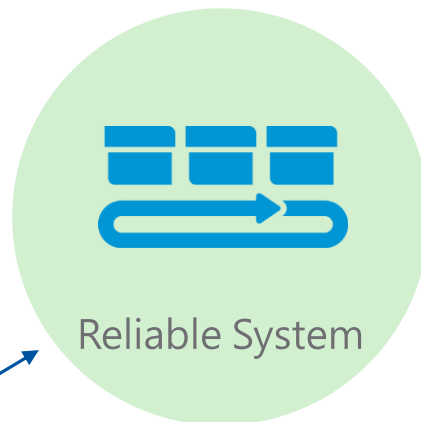
NetApp 解決方案

NetApp HCI & AFF with FabricPool



效能跟成本

NetApp StorageGrid & Active IQ



資料系統的可靠性



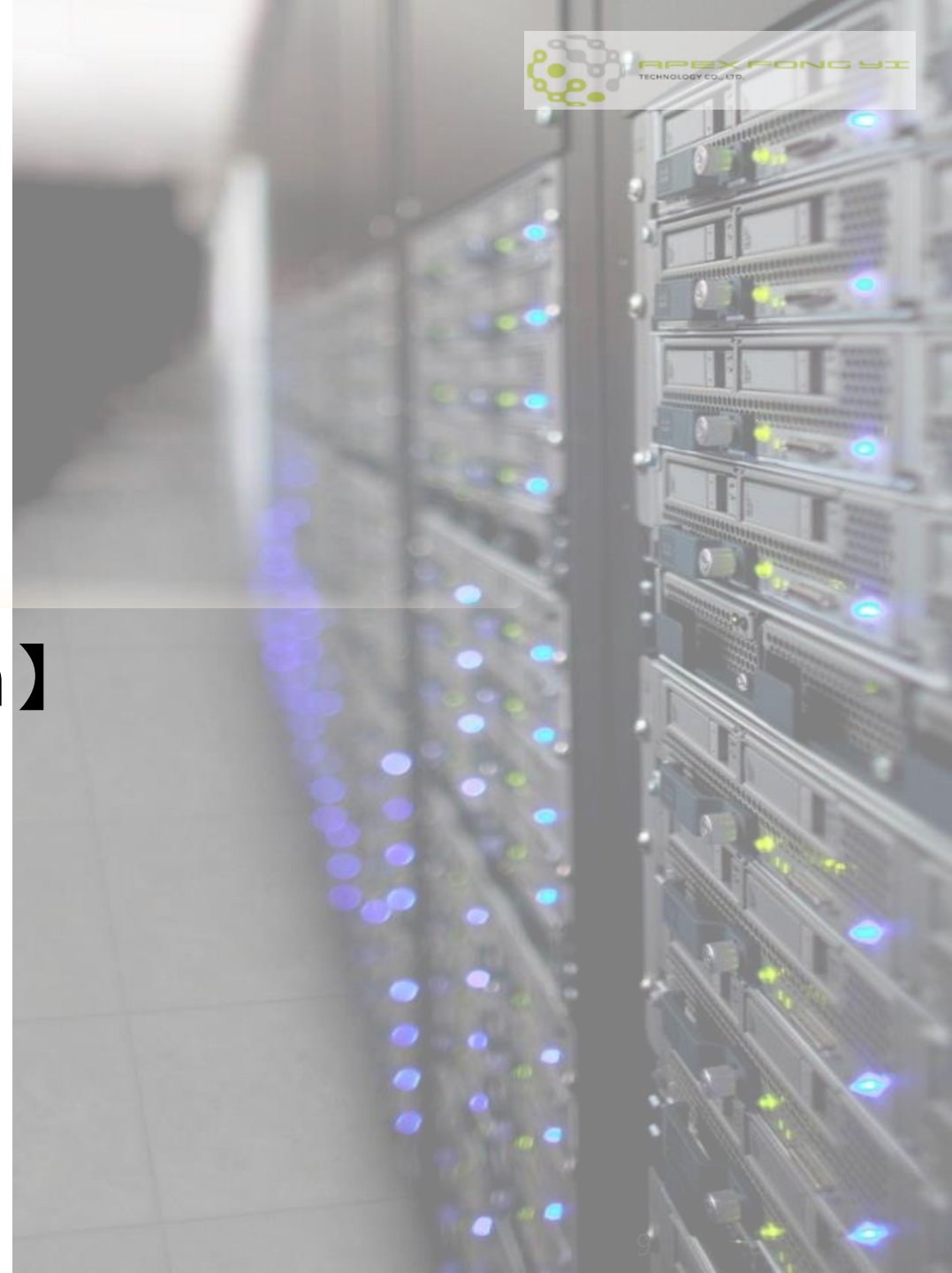
稽核及可視性管理

NetApp High Availability & SnapMirror



3. 全面化解決方案

【NetApp Total Solution】



原架構示意圖-分散式機房

北歐博克群島



規劃需求



資料中心整併

各校區備援



高穩定性的資料中心

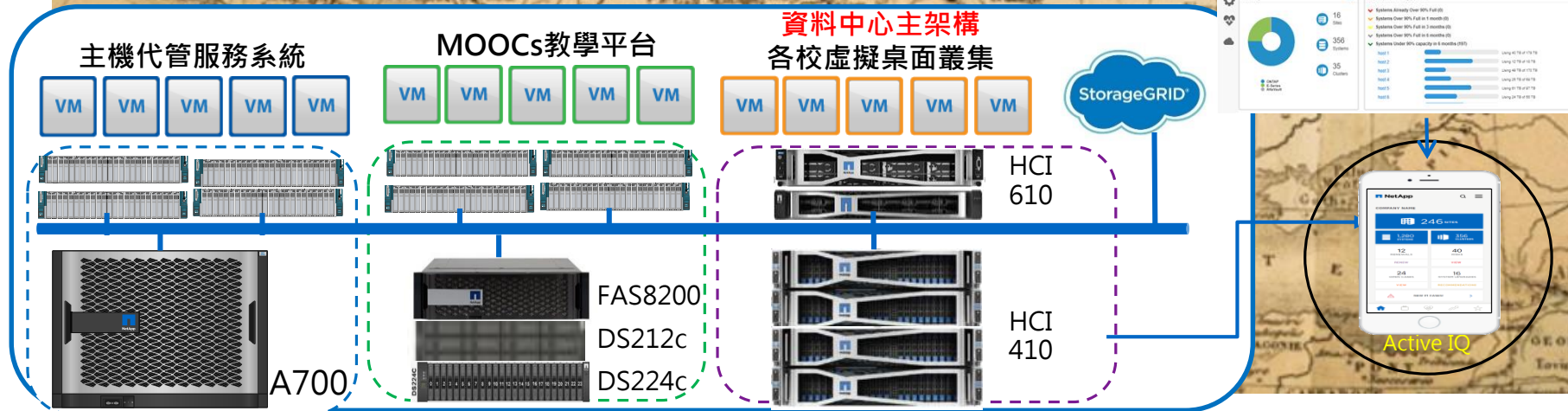
高效能的資料中心



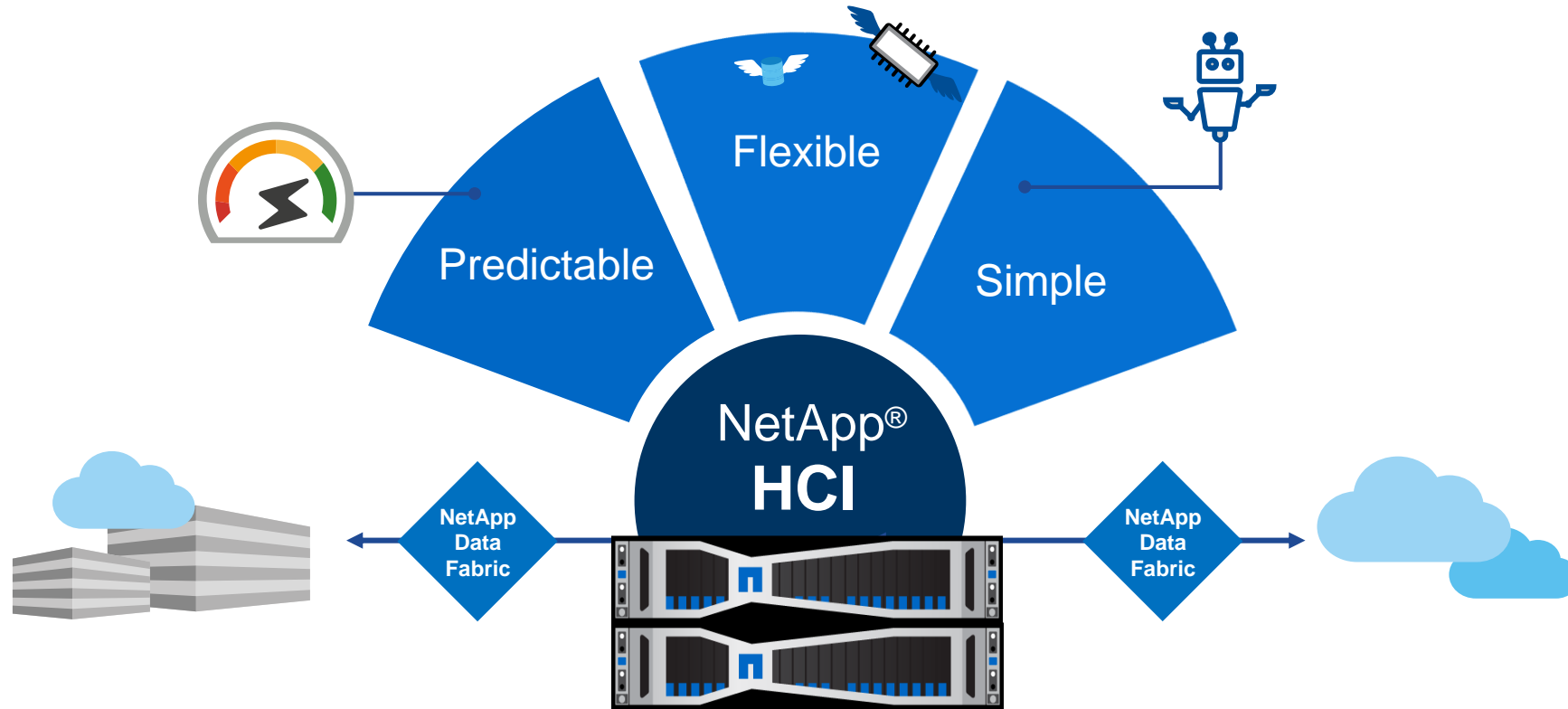
公私有雲整合之混合雲方案

統一管理

建議架構示意圖-向上集中資料中心



Why Use NetApp HCI

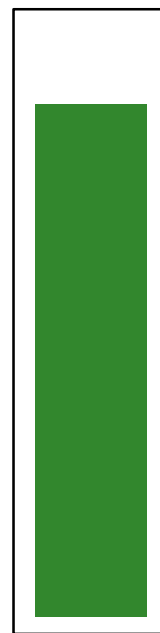
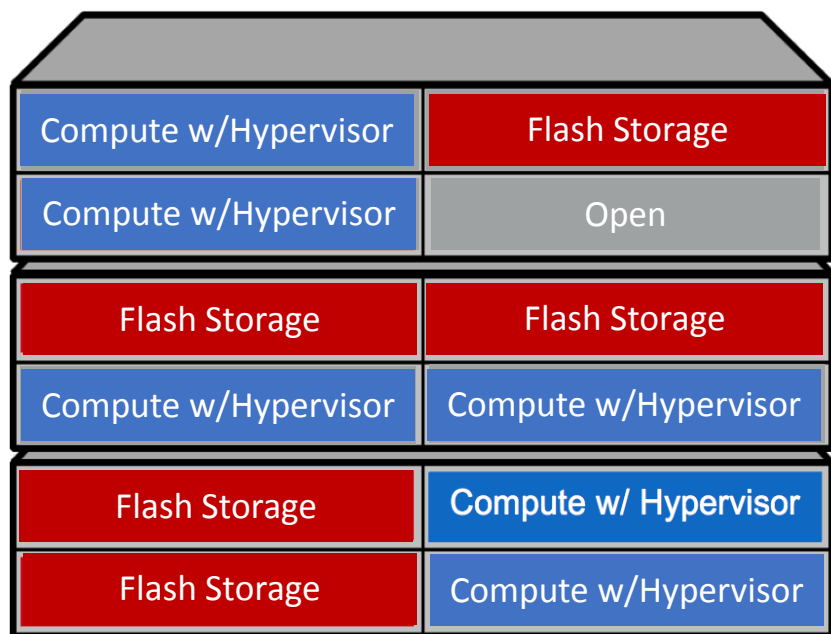


可預測的效能、彈性架構、簡單維運



擴充：獨立運算能力及儲存空間

輕鬆滿足快速變化的業務需求



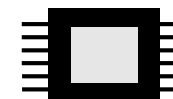
PERFORMANCE



CAPACITY



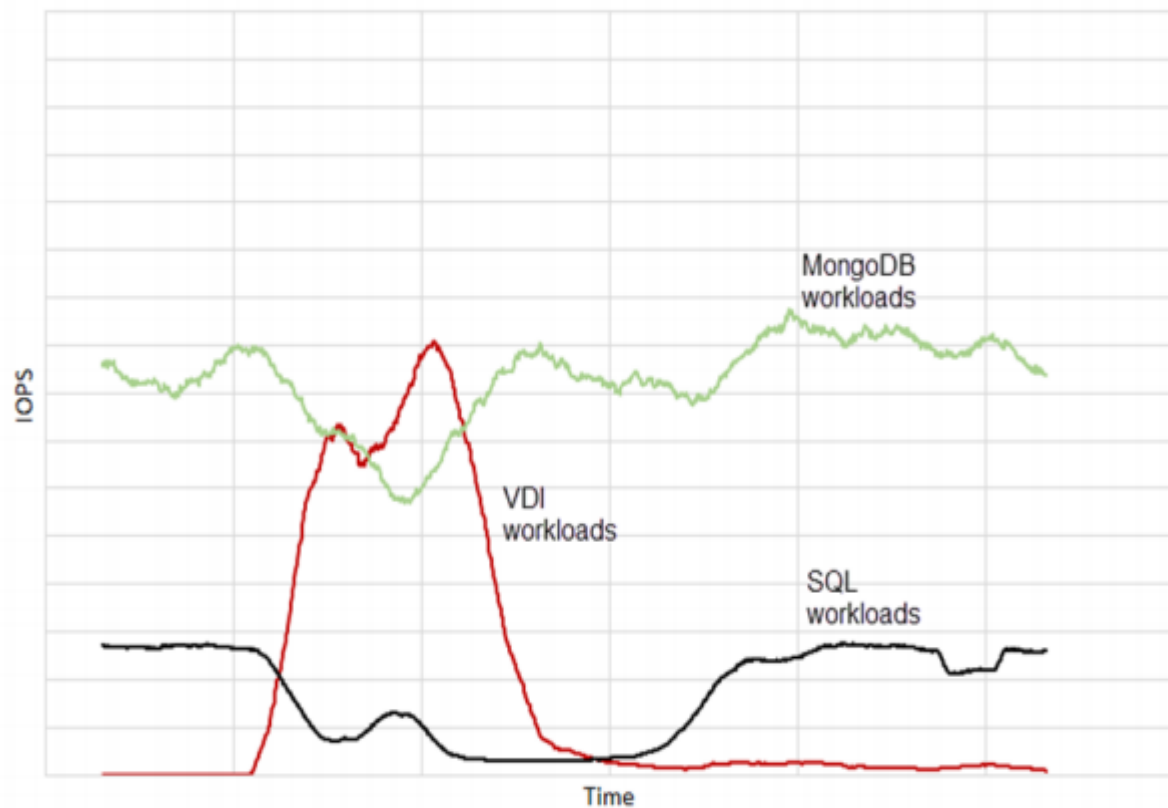
MEMORY



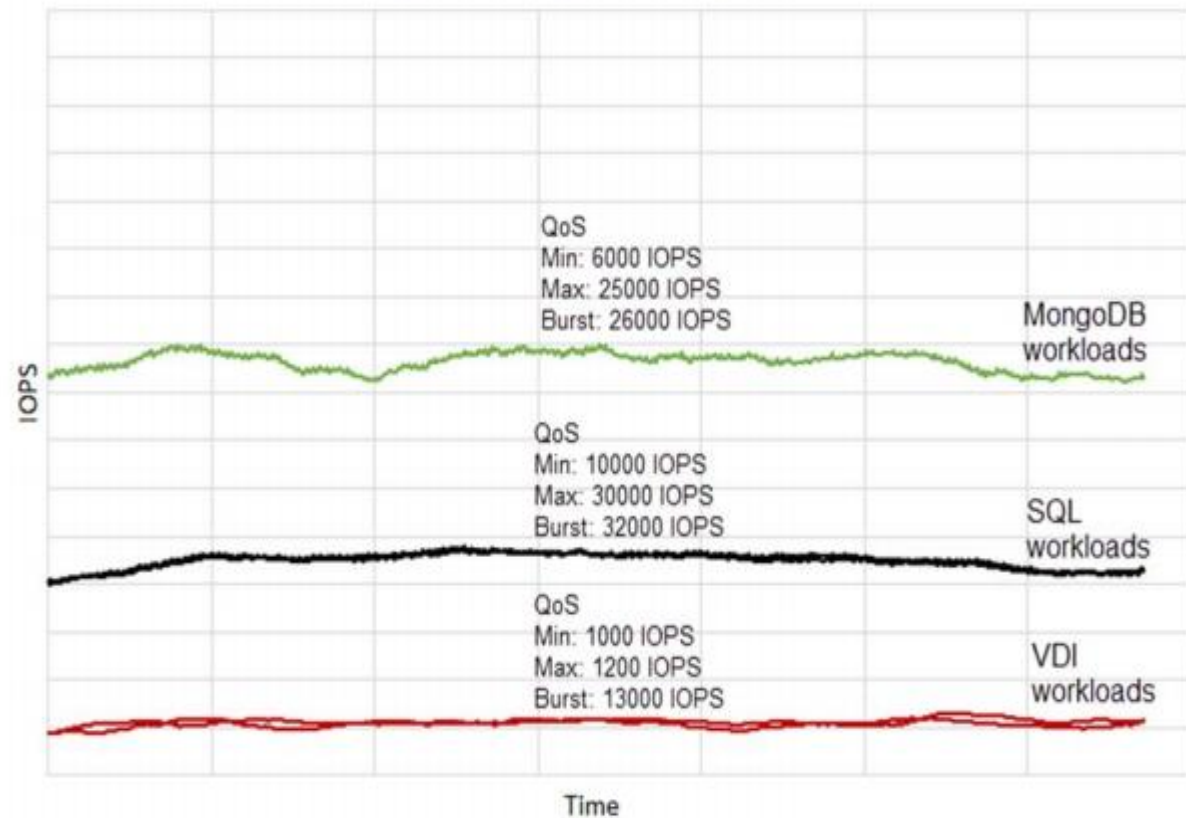
CPU

可預測的效能

Mixed workloads without QoS type control



Mixed workloads with QoS



NetApp HCI H410 & 610



Figure 1) H410C Compute Node



Figure 2) H610C Graphic Compute Node

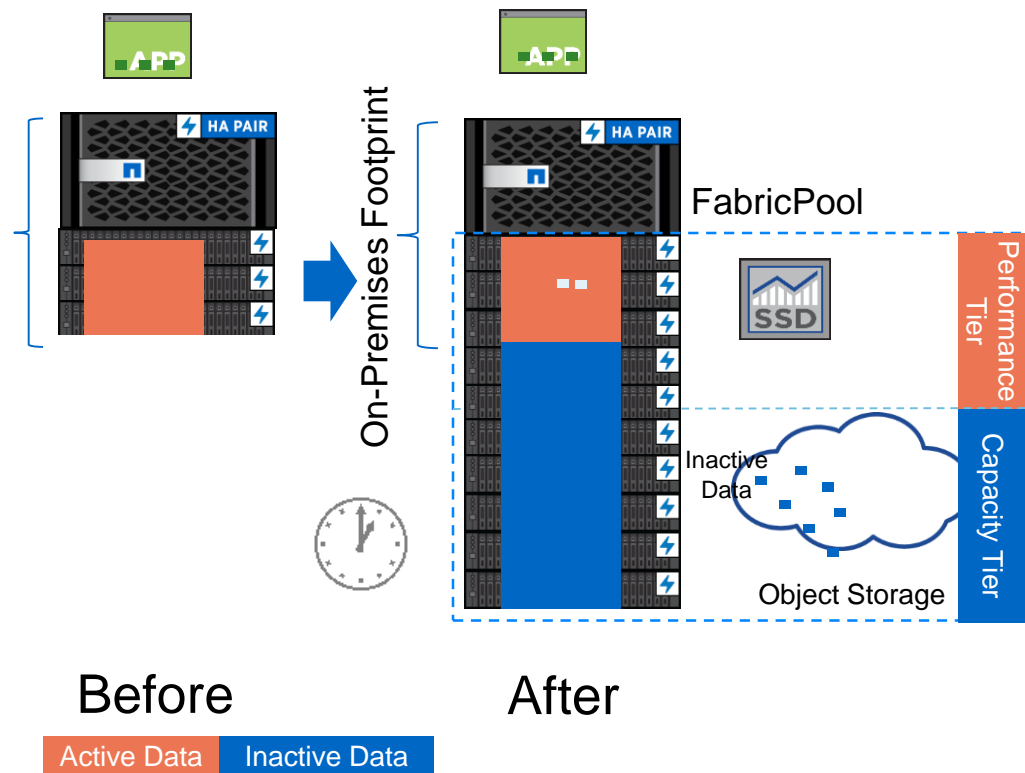


Figure 3) H610S Storage Node

Compute Nodes	H410C	H610C
Rack Units	1 RU, half-width	2 RU
CPU	2x Intel 5122, 4 cores, 3.6GHz 2x Intel 4110, 8 cores, 2.1GHz 2x Intel 5120, 14 cores, 2.1GHz 2x Intel 6138, 20 cores, 2.0GHz	2x Intel Xeon Gold 6130, 16 cores, 2.1GHz 2x NVIDIA Tesla M10 GPU cards
Cores for VM's	8-40	32
Memory	384GB-1TB	512
Hypervisor	VMware vSphere 6.0, 6.5, & 6.7	
Base Networking	4x10/25GbE (SFP 28)**, 2 x 1GbE RJ45**	
Out-of-Band Management (opt)	1 x 1GbE RJ45	
Storage Nodes	H410S	H610S
	1 RU, half-width	1 RU Storage Node*
SSD	480GB - 11.52TB (960GB Encrypt-ing/nonencrypting)	256-704GB
Drive Capacity	960GB/1.92TB/3.84TB	960GB/1.92TB/3.84TB
Effective Capacity*	5.5TB - 44TB	20TB - 80TB
Performance per node	50,000 IOPS - 100,000 IOPS	100,000 IOPS
Base Networking	2 x 10/25GbE	2 x 10/25GbE iSCSI SFP28
Out-of-Band Management (opt)	1 x 1GbE RJ45	2 x 1GbE RJ45

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What Is FabricPool?



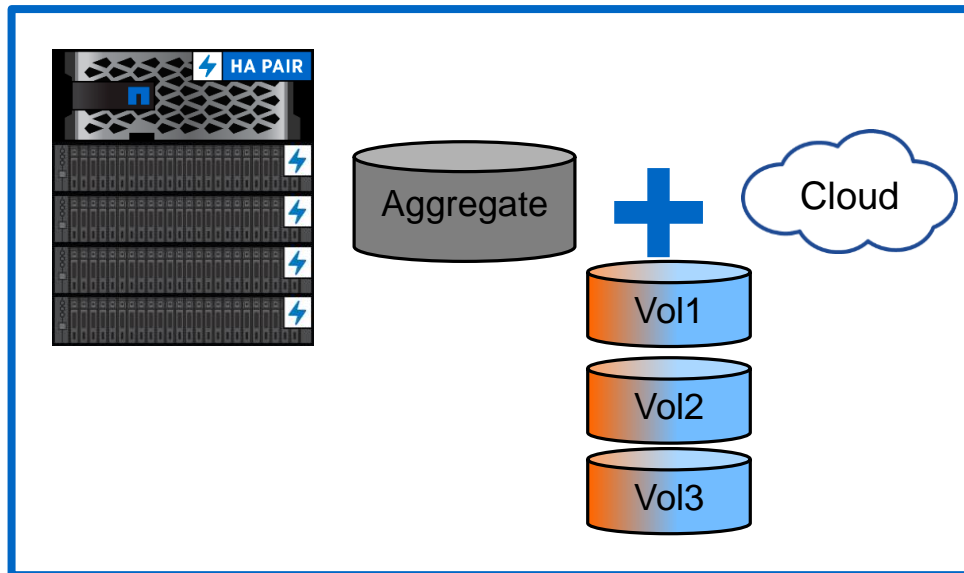
- 自動分層
- 智能判斷
 - 壓縮
 - 去重複資料
 - 空間使用最大化

ALL Flash 搭配 FabricPool Solution
帶來最高CP值

異地備援 做到最完善的資料保護

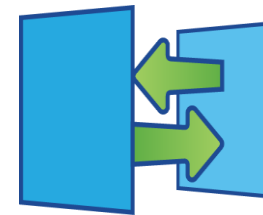
- FabricPool aggregate + data protection

分點到資料中心 資料中心上雲端



Source

NetApp®
SnapMirror®



Destination

統一集中化管理所有設備

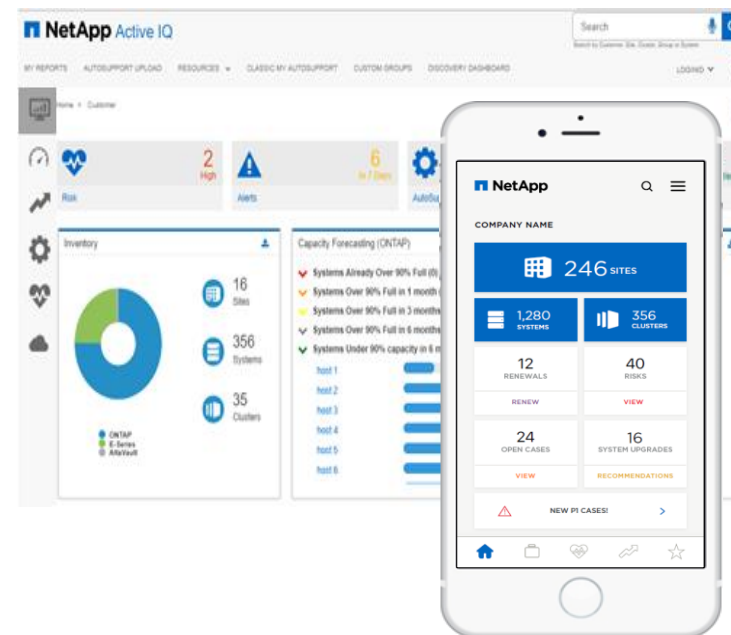
Active IQ: 主動確認和預測洞察

ACTIONABLE
INTELLIGENCE

PREDICTIVE,
SELF-HEALING
CARE

GLOBAL ANALYTICS
AT YOUR FINGERTIPS

- 透過單一介面檢查所有設備狀況
- 智能分析設備使用狀況
- 讓你隨時可以監控所有設備
- 整合Auto-Support 主動告警



WORKS ACROSS ALL
NETAPP SYSTEMS



4. 結論

【Why NetApp】

Gartner Report

Leadership in the General-Purpose Disk Arrays Market

Figure 1. Magic Quadrant for General-Purpose Disk Arrays



Source: Gartner (November 2018)

NetApp recognized as a **Leader** six times in a row in Gartner 2018 Magic Quadrant for General-Purpose Disk Arrays

This Magic Quadrant was published as part of a larger research note and should be evaluated in the context of the entire report.

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Source: Gartner, Inc., November 8, 2018

Stanley Zaffos, Roger W. Cox, Valdis Filks, Santhosh Rao

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NetApp 5大保障+ISAC校園方案(106~107學年度20+成功案例)

買得安心、事後放心



NetApp

- 1 市佔率第一品牌
- 2 多雲整合最完整
- 3 全台四大備品倉
- 4 台灣研發、在地支援
- 5 實現 IT 投資最高價值

現在我們站在很重要的交叉路口
博克島的命運會因為我們的決定而改變



相信本團隊，能與貴單位攜手一同完成
NetApp進得去 教學走出來 大家一起培育人才的夢想



Thank You