



單鍵建構彈性超融合 邁向安全智慧教育雲

Nutanix 資深技術顧問
陳永恆 Eternity Chen

NUTANIX – The Enterprise Cloud Company

協助企業 將IT基礎架構 隱形化

讓企業能更加專注於驅動組織營運

核心服務和關鍵系統

16500+ customers

Over 145+ countries

5000+ employees



創立於 2009年



4年來持續榮獲：NPS 90+
(Net Promoter Score)

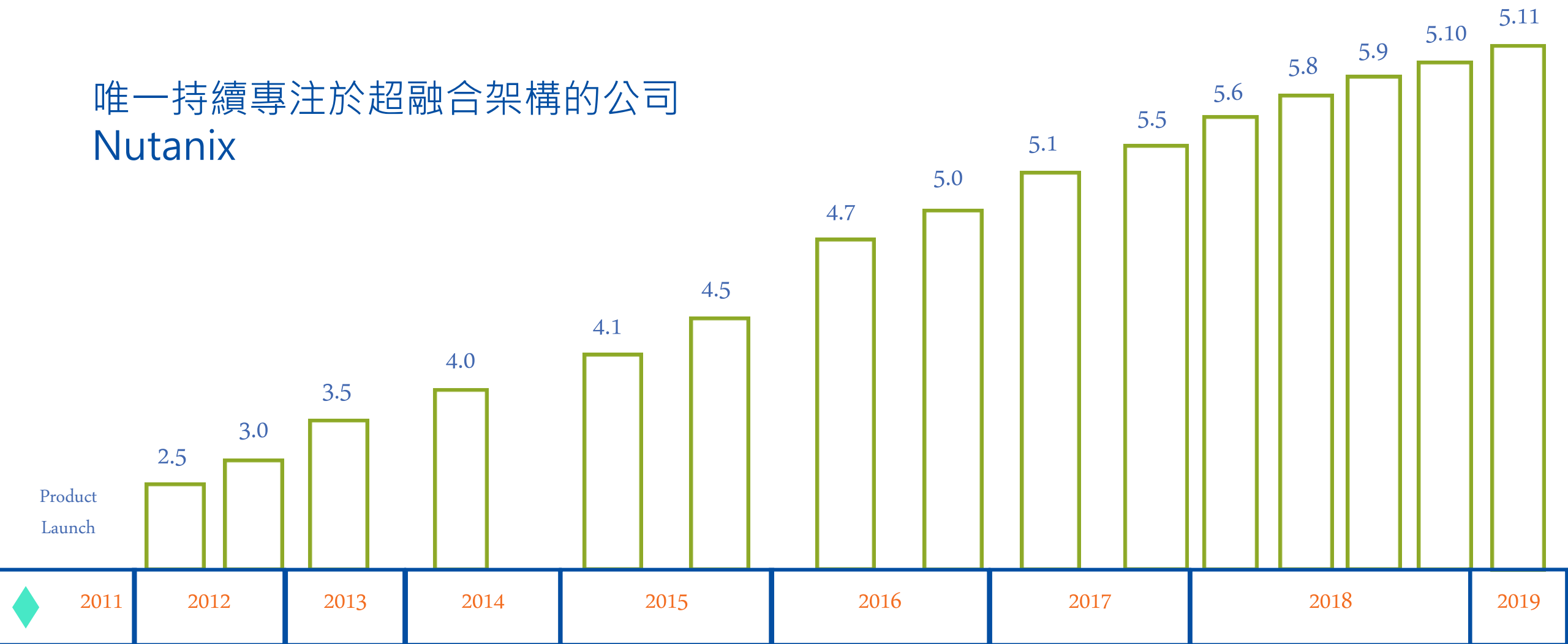


NASDAQ 上市：
NTNX



NUTANIX AOS 版本演進

唯一持續專注於超融合架構的公司
Nutanix



NUTANIX – 超融合領域領導者



November 2018
Gartner

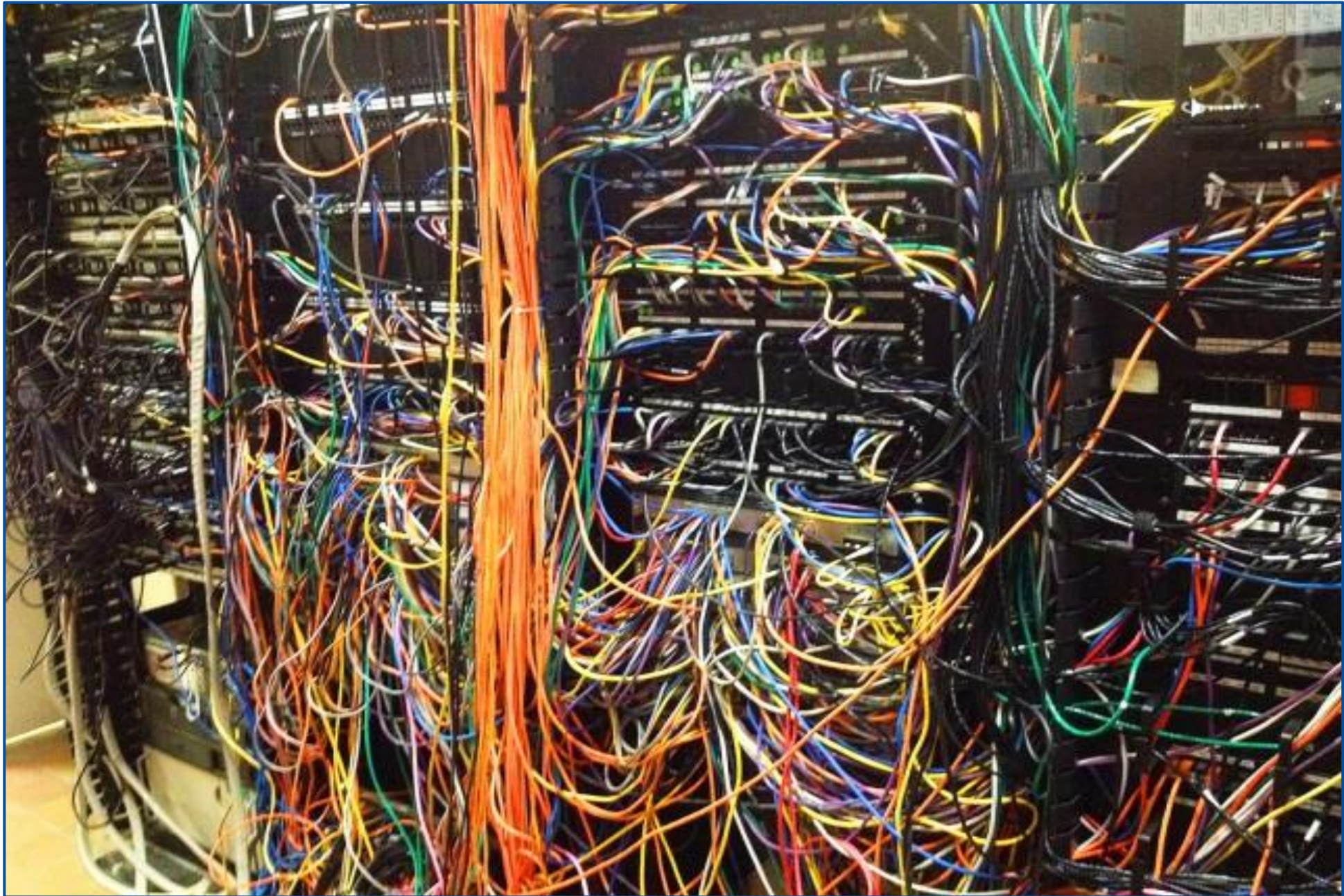


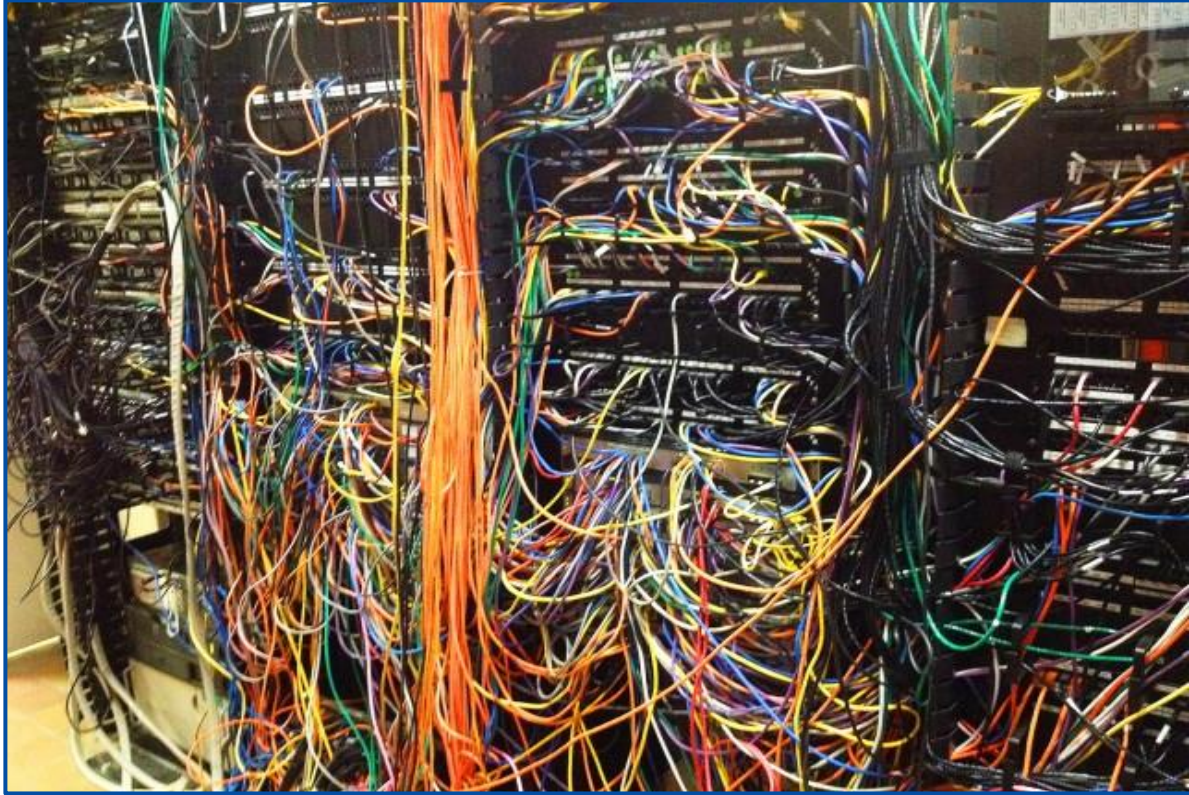
Q3 2018
FORRESTER



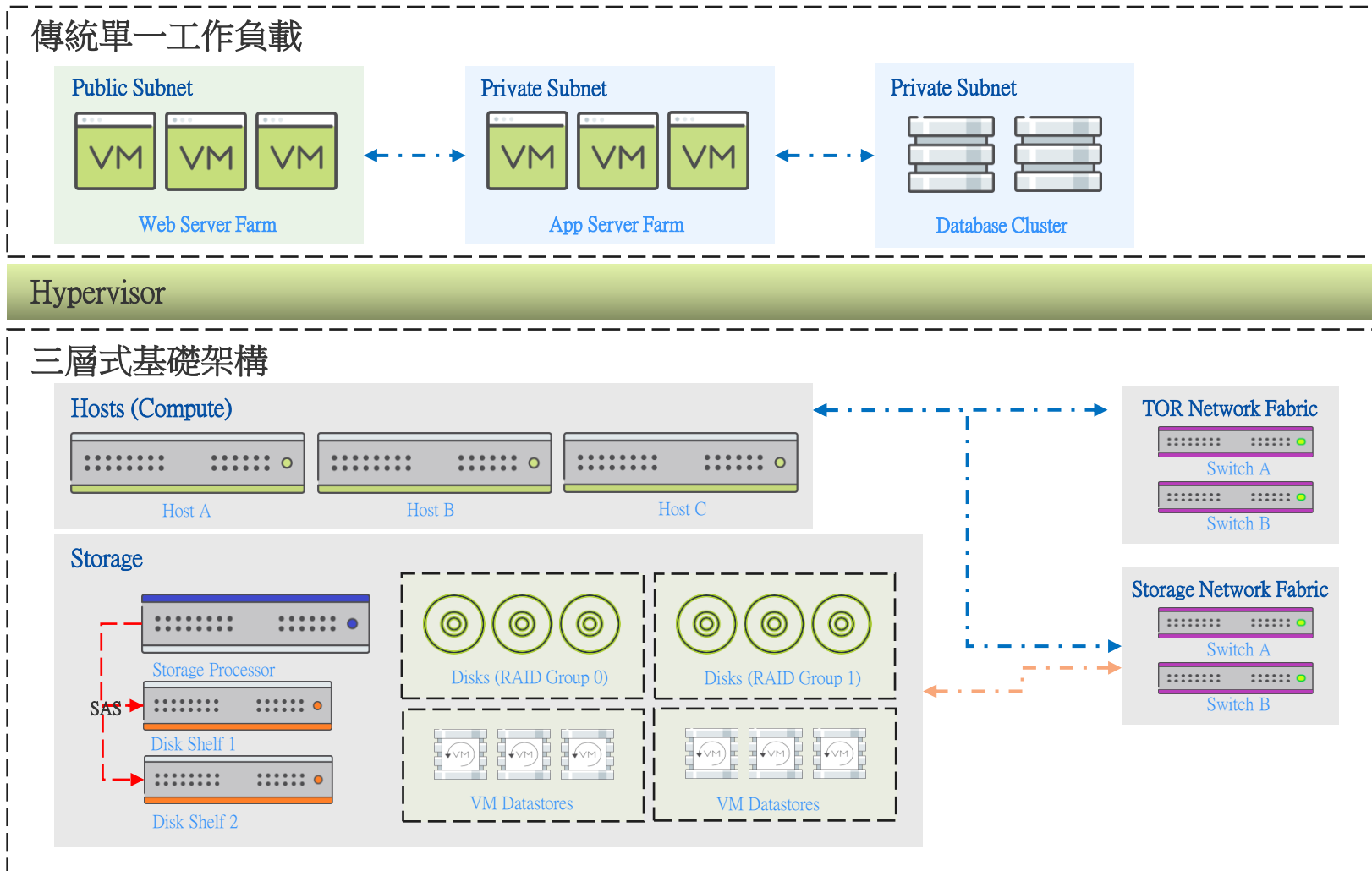
November 2019
Gartner







傳統三層式架構



核心服務 & 關鍵系統

儲存. 網路. 伺服器. 虛擬化平台.

規劃 - 選擇

建置 - 人力

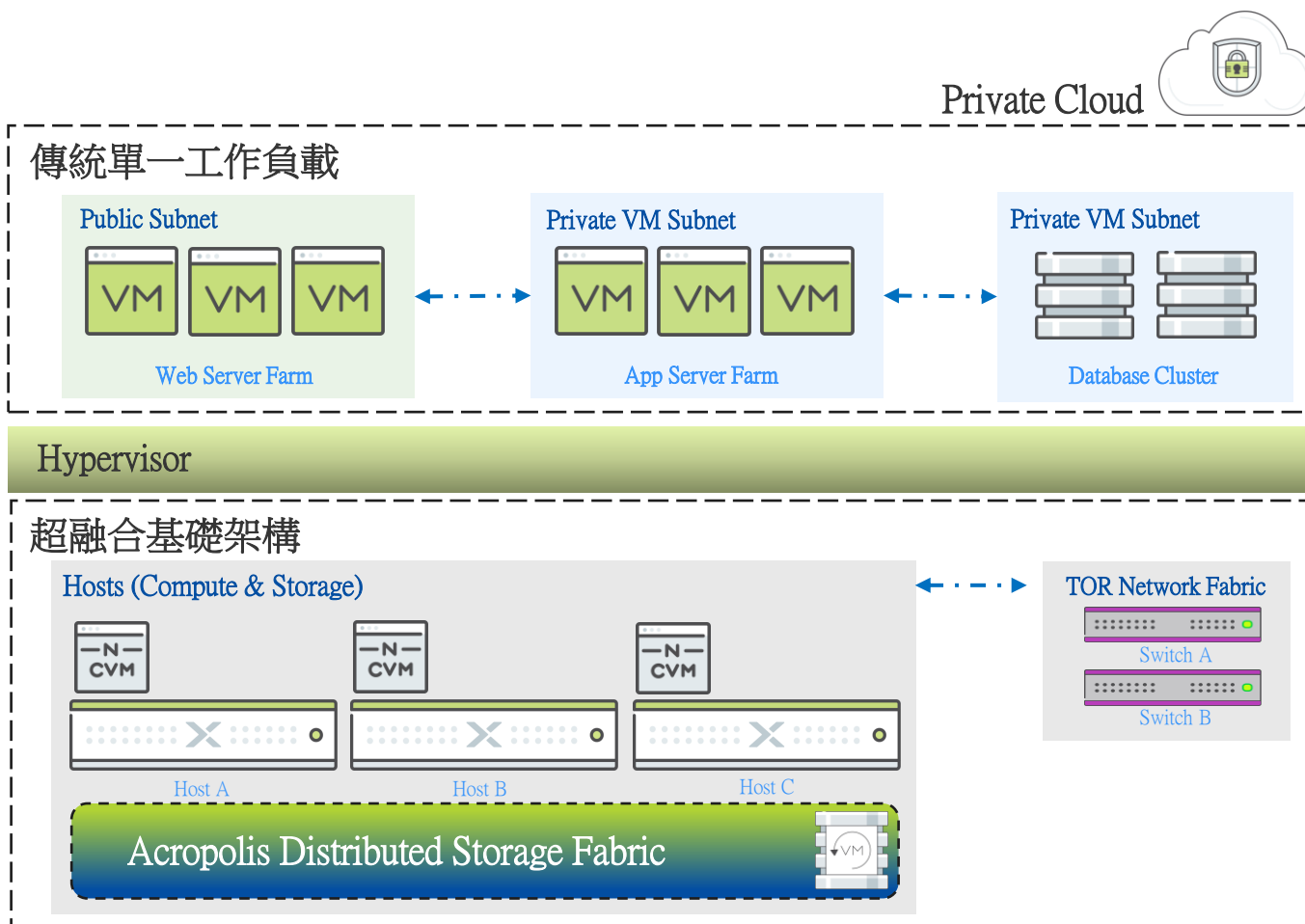
維運 - 挑戰

擴充 - 評估

複雜! 風險! 費用!



基礎架構數位轉型



複雜 => 簡單

— 可靠 —

降低維運風險, 故障排除效率

— 效能 —

橫向擴充, 固態硬碟應用

— 彈性 —

高擴充相容性, 滿足需求, 確保投資

— 經濟 —

管理效率, 節省電力與空間

更快! 更省! 更安心!

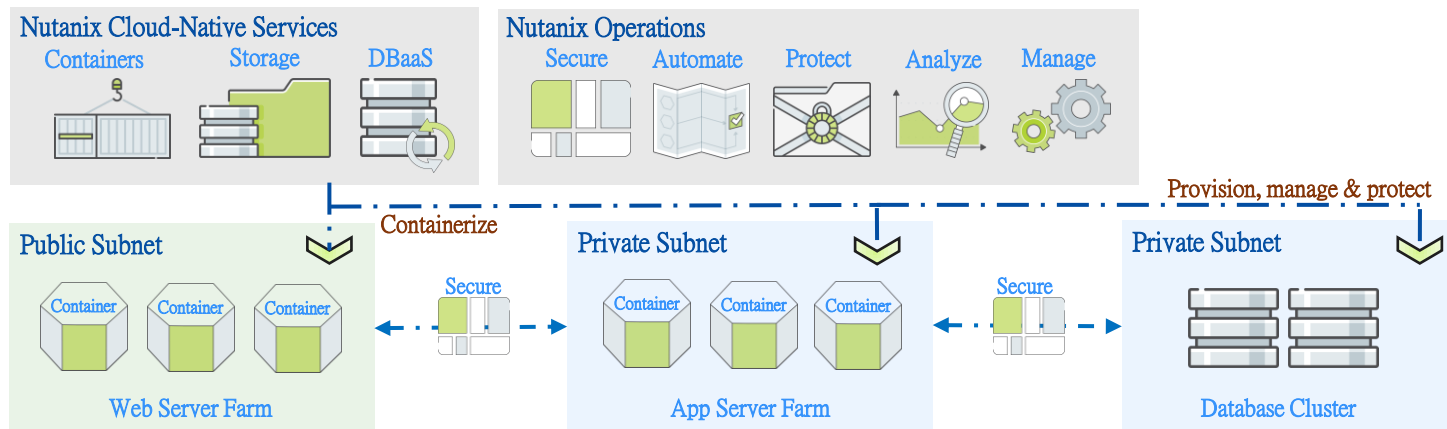


工作負載數位轉型

Private Cloud

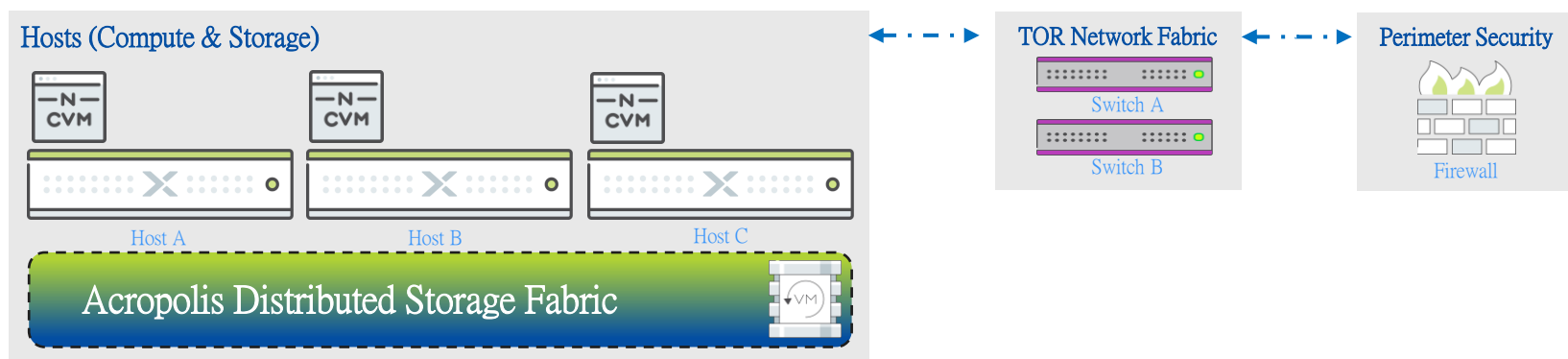


現代化工作負載



Hypervisor

超融合基礎架構

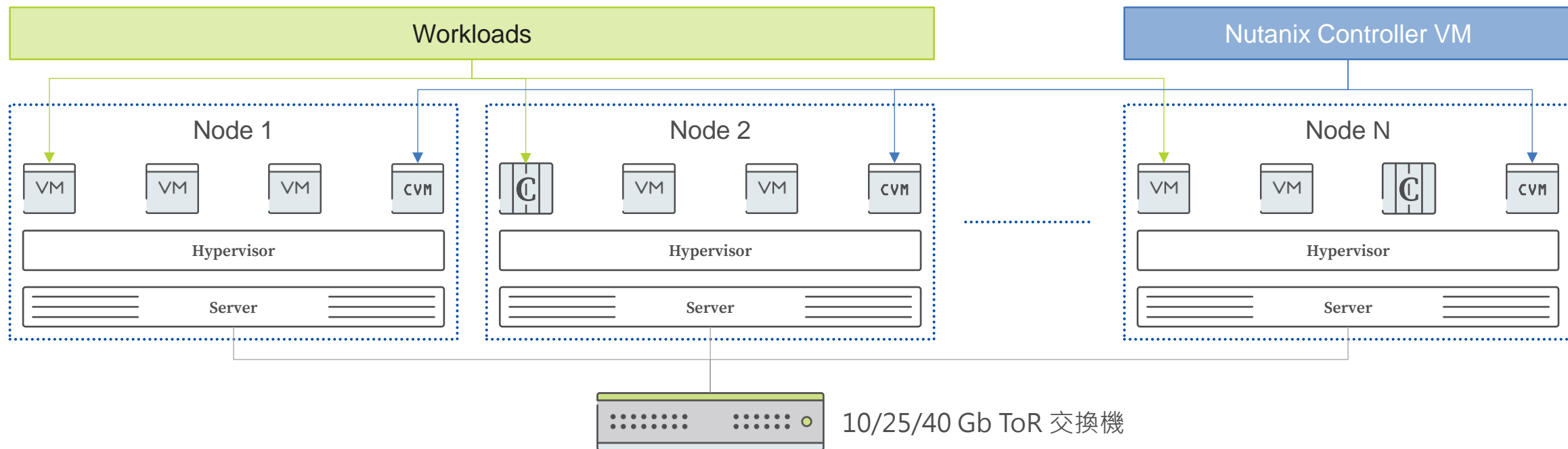


私有雲

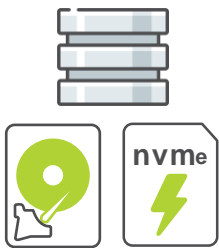
- 進階管理 –
智慧分析, 資料庫複製,
應用程式自動化
 - 多元應用 –
Container, 東西向防火牆
 - 儲存服務 –
Block, Files, Object
- 智慧! 敏捷! 多元!



可擴展的分散式系統設計



企業級儲存



- 快照 & 複製
- 資料自動分層
- 壓縮
- 重複資料刪除
- RF2, RF3, ECX
- 應用一致性快照
- 非同步複製
- Near Sync 複製
- 同步複製
- 雙活

安全



- 自動驗證和自我修復
- 完整的堆疊安全開發生命週期
- 客戶端驗證
- 群集鎖定
- 靜態資料加密 (SED或基於軟體/金鑰管理)
- STIG : 安全技術實施指南



快照保護 無須妥協

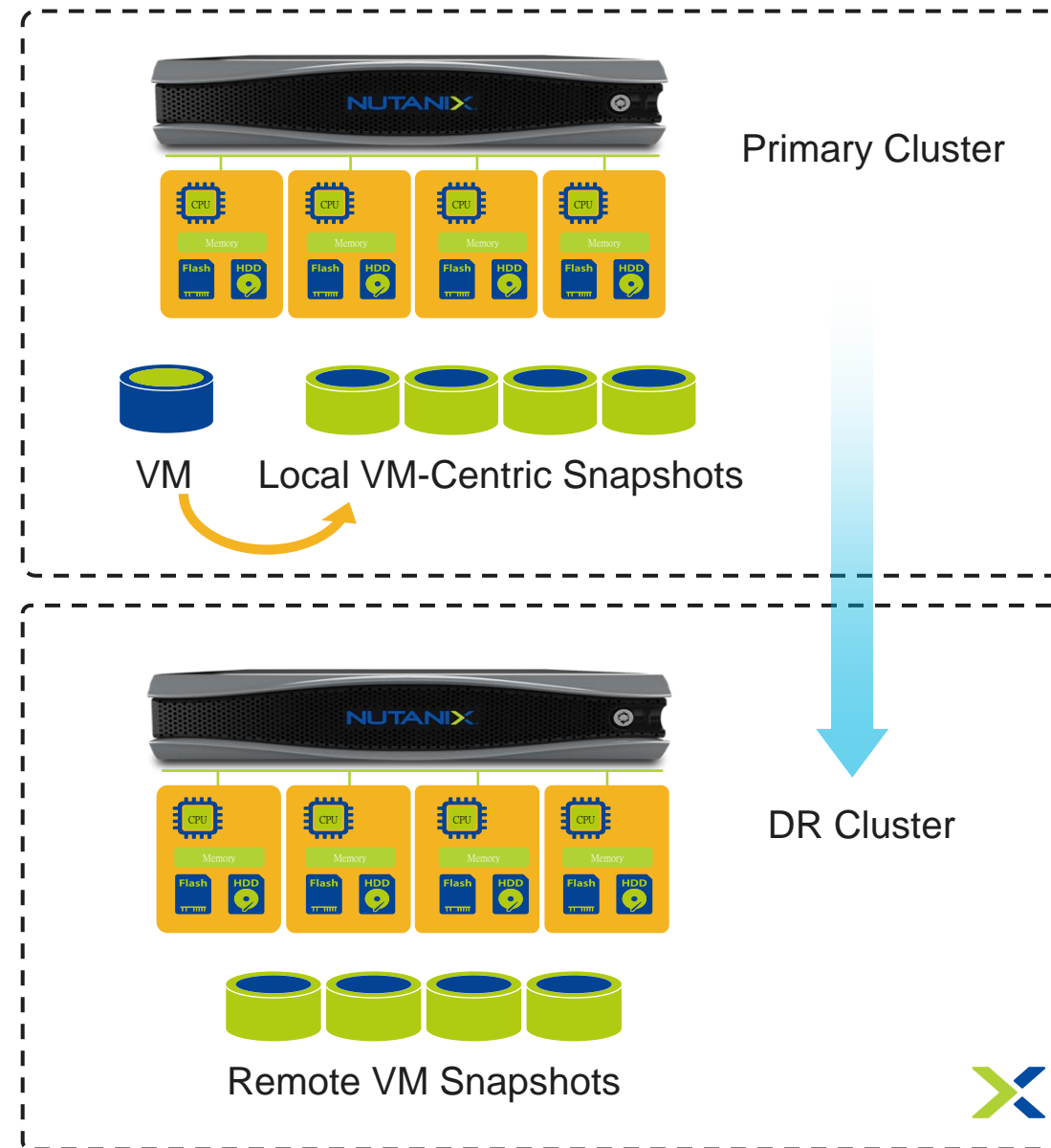
幾乎無損效能 虛擬機排程快照保護

Overview

- Create unlimited local copies of VM
- Allow policy-based snapshot management
- Enable app and crash consistent policies
- Leverage Prism for snapshot management
- Support for multiple hypervisors

Benefits

- Self-service file-level restore
- VM to LUN mapping eliminated
- No performance impact through redirect on write
- Efficient storage utilization
- Unified consumer grade interface



AHV 功能豐富且維運簡單

建構於橫向擴充軟體定義儲存 為超融合而生的虛擬化平台



+ Enterprise Features

+ Enterprise Feature Set

+ Amazing Management

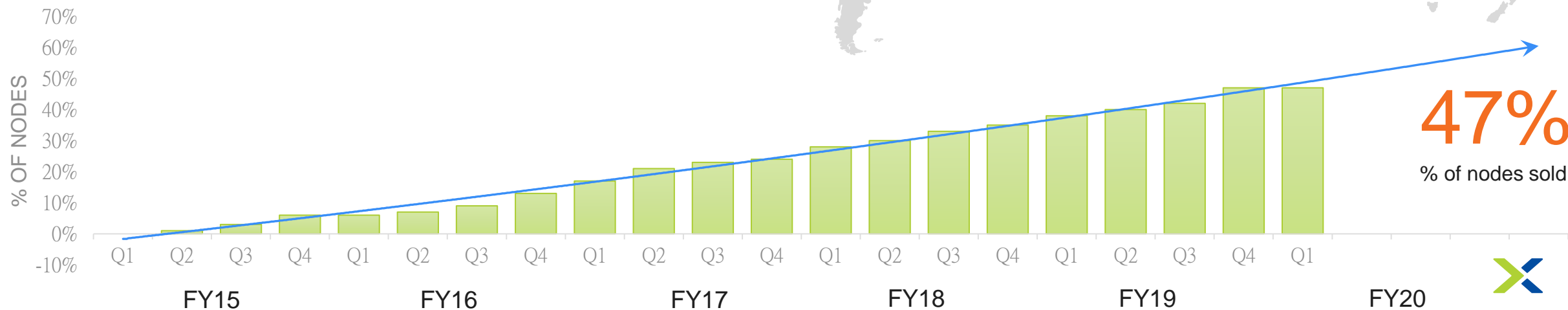
- 安全第一
- 節點和VM高可用性
- 自動資源調度和VM放置
- 避免資源爭用/ 熱點 (ADS)
- 自動CPU兼容性
- 線上遷移
- 以虛擬機為中心的儲存，具有 Snapshot和Clone
- 分析和預測
- Storage QOS
- 動態IP地址管理 (IPAM)
- 軟件定義網絡 (SDN) 和可視化
- 網絡微分割
- AHV Turbo
- 一鑑式操作 (基礎架構/ 虛擬化/ 管理)
- 映像檔服務 (導入、轉換、管理)
- 自動化VM Migration
- 自動化DR
- 跨Hypervisor DR & Backup



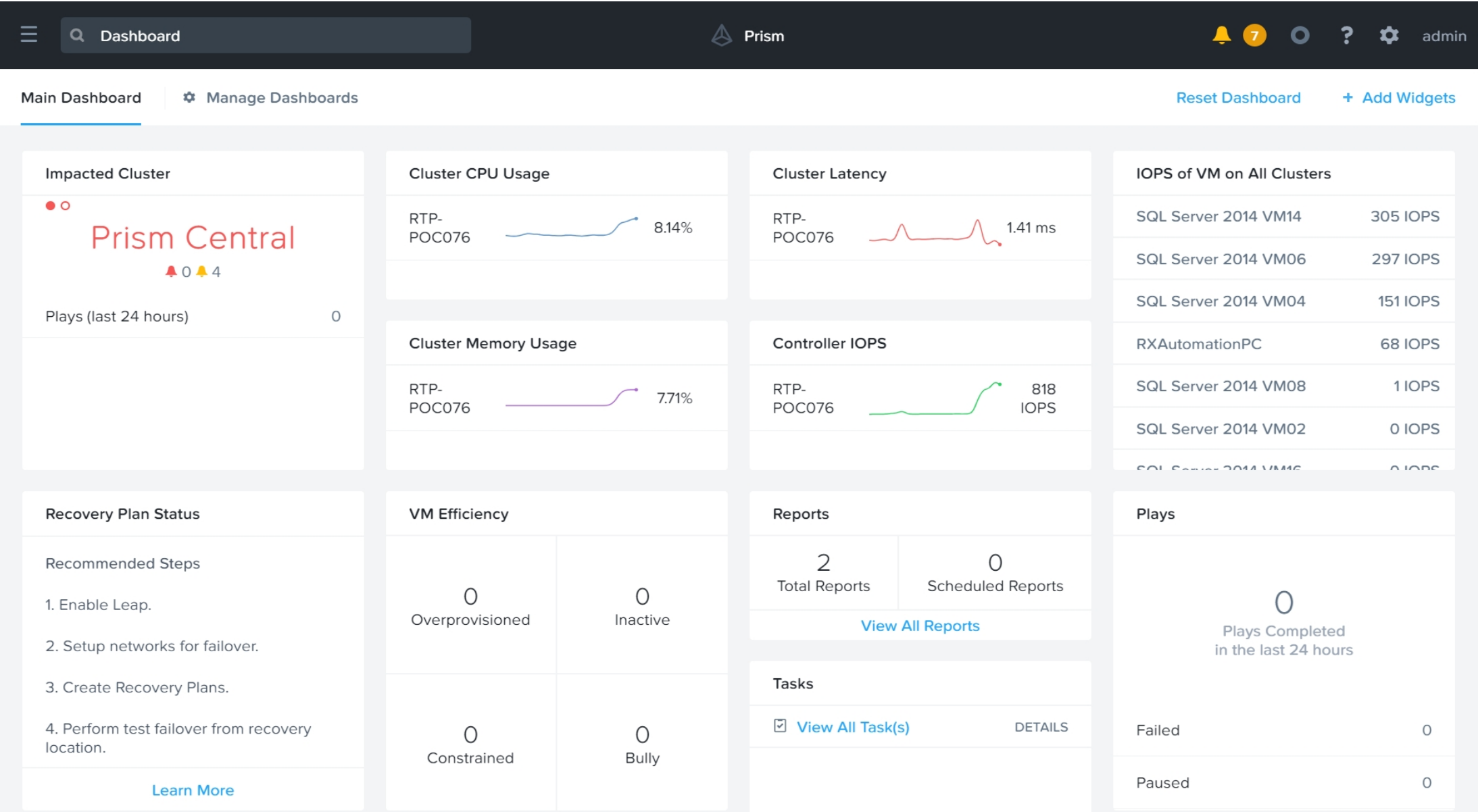
AHV 全球客戶使用率



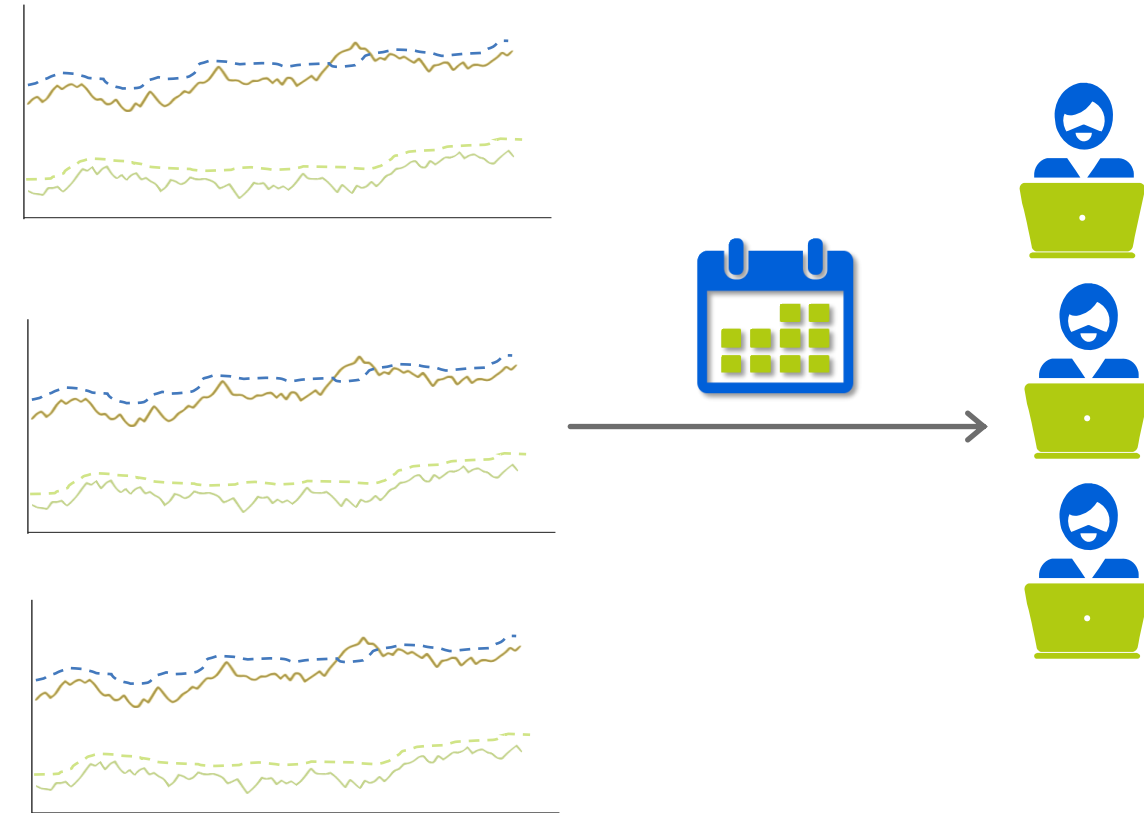
- >47% Run AHV (Q1FY20)
- >70% of US Federal Running AHV
- 2,000 All-AHV Node Customer



客製化儀表板 一眼掌握系統資訊



客製化 排程報表



What is it?

- Create scheduled custom reports with email delivery
- Leverages existing dashboards and widgets

Benefits

- Easily socialize reports / KPIs to broader audience
- Allow application owners and other external stakeholders access to valuable performance data
- Easily share evidence of waste or resource constraint



虛擬機規格 智慧分析與建議

10 Overprovisioned Potential Gain: 82.33 GiB Storage, 38 vCPU	25 Inactive Potential Gain: 17 GiB Memory, 2.37 TiB Storage, 5 vCPU
10 Constrained	0 Bully

What is it?

- Automatically detect VMs that occupy unused resources, or have performance issues due to non optimized resource consumption
- Provides guidance for correct VM resource (RAM, CPU) allocation based on behavioral analysis and machine learning
- Generate reports of idle (zombie) VMs to enable simple resource reclamation or reallocation to other VMs.

Benefits:

- Eliminate waste by optimal utilization of resources
- Improve VM performance by detecting any performance issues
- Generate reports of idle (zombie) VMs to enabled simple resource reclamation or reallocation to other VMs.



虛擬機規格 智慧分析與建議

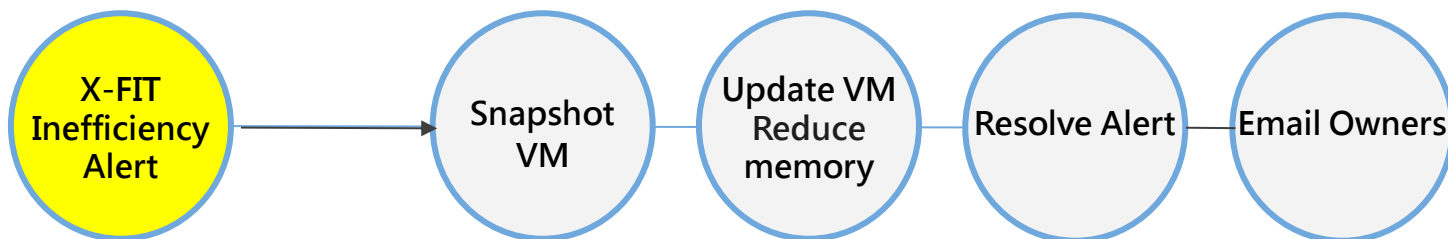
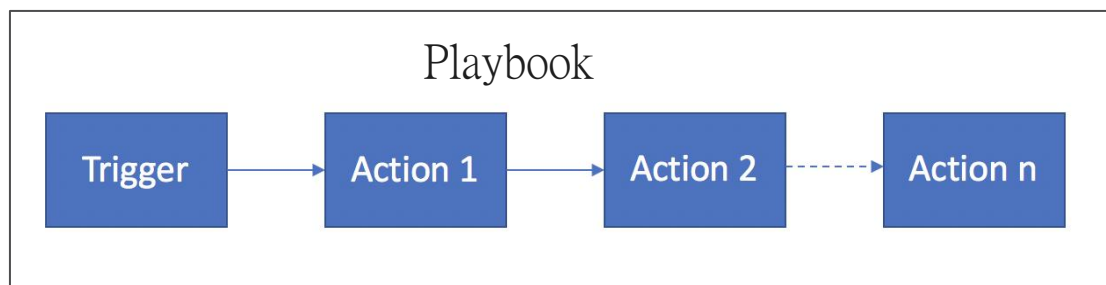
Name	Efficiency Detail	Host	Memory Gain (GiB)
VM1	-Max hourly average memory usage (19.71%) was less than the threshold (20%) during the last 21 days.	Host-x	6.03
VM2	-Max hourly average memory usage (18.59%) was less than the threshold (20%) during the last 21 days.	Host-x	6.14
VM3	-Max hourly average memory usage (11.45%) was less than the threshold (20%) during the last 21 days.	Host-x	13.71
VM4	-Max hourly average memory usage (10.57%) was less than the threshold (20%) during the last 21 days.	Host-x	13.89
VM5	-Max hourly average memory usage (35.21%) was less than the threshold (50%) during the last 21 days.	Host-x	4.48
VM6	-Max hourly average memory usage (42.75%) was less than the threshold (50%) during the last 21 days.	Host-x	11.18
VM7	-Max hourly average memory usage (42.44%) was less than the threshold (50%) during the last 21 days.	Host-x	11.27
VM8	-Max hourly average memory usage (39.07%) was less than the threshold (50%) during the last 21 days.	Host-x	12.28
VM9	-Max hourly average memory usage (39.46%) was less than the threshold (50%) during the last 21 days.	Host-x	12.16
VM10	-Max hourly average memory usage (41.35%) was less than the threshold (50%) during the last 21 days.	Host-x	11.60
VM11	-Max hourly average memory usage (46.27%) was less than the threshold (50%) during the last 21 days.	Host-x	10.12
VM12	-Max hourly average memory usage (34.98%) was less than the threshold (50%) during the last 21 days.	Host-x	18.01
VM13	-Max hourly average memory usage (35.36%) was less than the threshold (50%) during the last 21 days.	Host-x	4.46
VM14	-Max hourly average memory usage (33.77%) was less than the threshold (50%) during the last 21 days.	Host-x	18.49
VM15	-Max hourly average memory usage (20.65%) was less than the threshold (50%) during the last 21 days.	Host-x	23.74
VM16	-Max hourly average memory usage (45.0%) was less than the threshold (50%) during the last 21 days.	Host-x	14.00
VM17	-Max hourly average memory usage (24.72%) was less than the threshold (50%) during the last 21 days.	Host-x	22.11

213.67



自動告警與調整資源

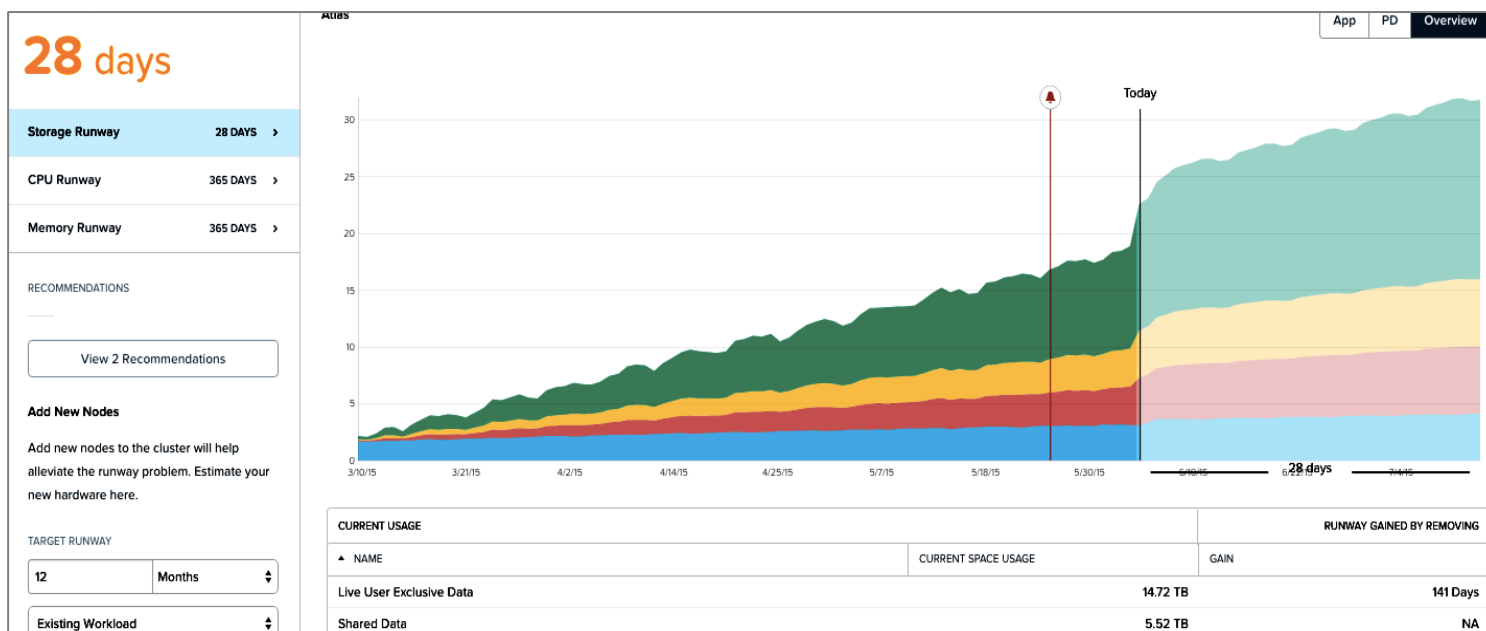
- Define a trigger (Alert or manual)
- Define actions to take to accomplish goal
- Mostly simple widget based (exception: powershell, api & ssh)
- Playbooks are grouping of a trigger and action(s)



Type name to filter by

<input type="checkbox"/>	Acknowledge Alert	SYSTEM
<input type="checkbox"/>	Email	SYSTEM
<input type="checkbox"/>	Generate Forecast Report	SYSTEM
<input type="checkbox"/>	IP Address Powershell	SYSTEM
<input type="checkbox"/>	IP Address SSH	SYSTEM
<input type="checkbox"/>	Power Off VM	SYSTEM
<input type="checkbox"/>	Power On VM	SYSTEM
<input type="checkbox"/>	Resolve Alert	SYSTEM
<input type="checkbox"/>	REST API	SYSTEM
<input type="checkbox"/>	Slack	SYSTEM
<input type="checkbox"/>	VM Add CPU	SYSTEM
<input type="checkbox"/>	VM Add Memory	SYSTEM
<input type="checkbox"/>	VM Powershell	SYSTEM
<input type="checkbox"/>	VM Reduce CPU	SYSTEM
<input type="checkbox"/>	VM Reduce Memory	SYSTEM
<input type="checkbox"/>	VM Snapshot	SYSTEM
<input type="checkbox"/>	VM SSH	SYSTEM
<input type="checkbox"/>	Wait for Some Time	SYSTEM
<input type="checkbox"/>	Wait until Day of Month	SYSTEM

系統資源使用趨勢分析預測



What is it?

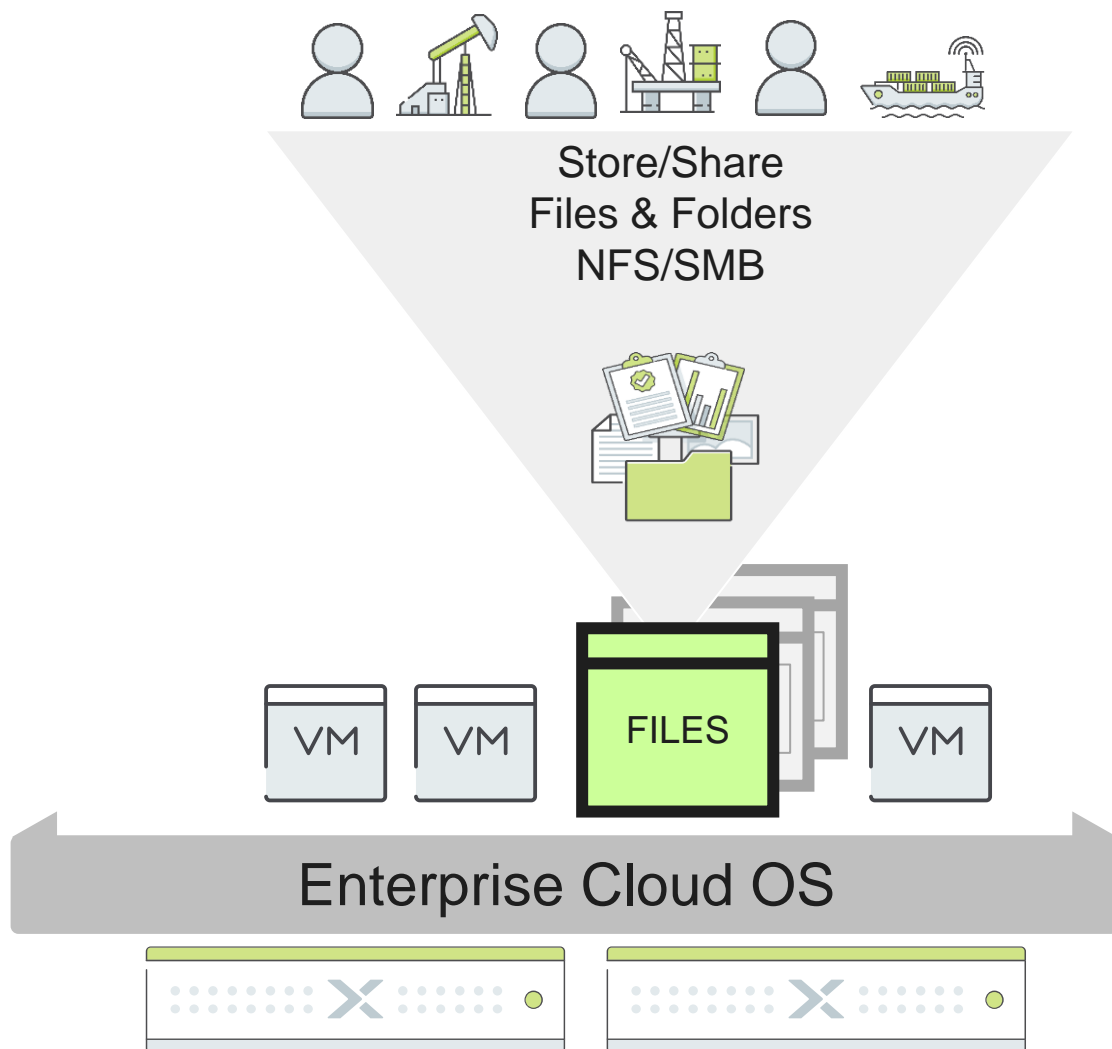
- Detailed capacity trends
- Intelligent recommendations
- Powered by patent pending X-FIT algorithm

Benefits:

- Enables pay as you grow capacity expansion
- Eliminates guesswork



NUTANIX 企業雲 - 原生檔案服務



Simple & Intelligent

- Fully-managed file service
- Deploy in minutes
- 1-click file insights and recommendations

Scalable

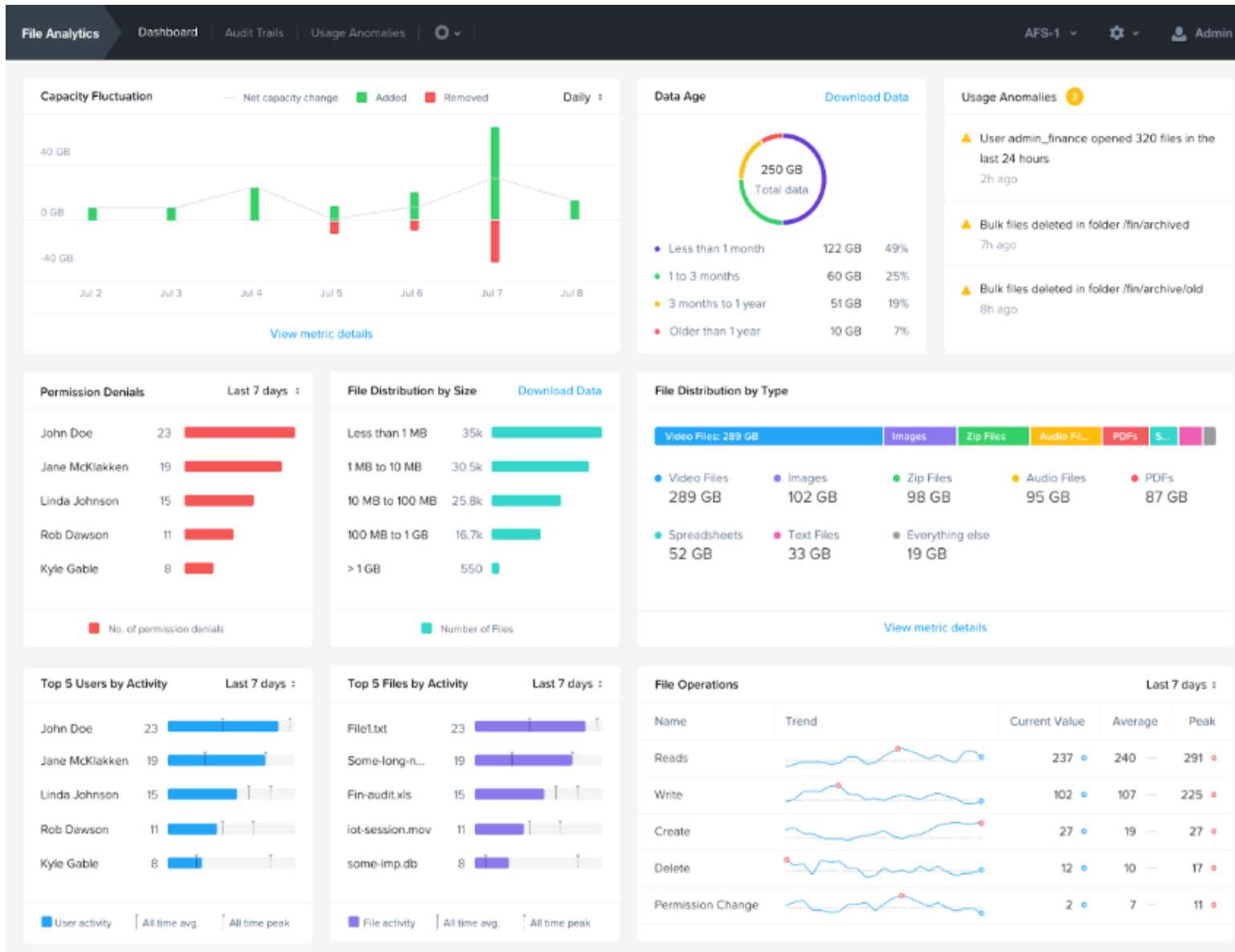
- Pay as you grow → Pay only for what you store
- Petabyte scale
- Grow and shrink capacity on demand

Enterprise Class

- Standard Interfaces: NFS & SMB
- Secure, reliable and resilient architecture
- Support 1000s of simultaneous connections



檔案服務 智慧分析



Data about Data

- Visibility into what data is being stored and how it changes over time

Audit Trails

- Search & Filter who accessed which Files
- Identify every change made to a given File and who made the change

Anomaly Detection

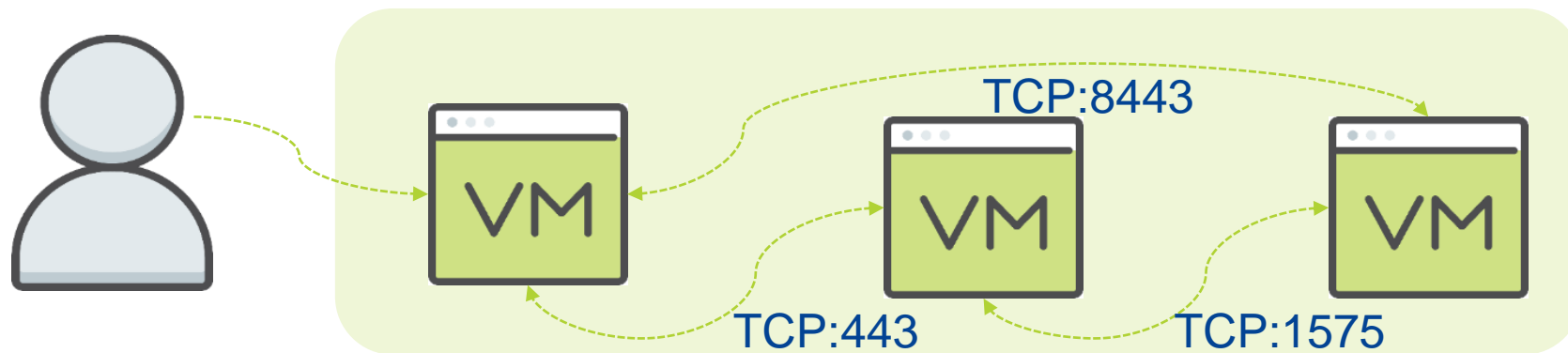
- Define & Detect anomalies in access behavior
- Receive Email Alerts when anomalies occur



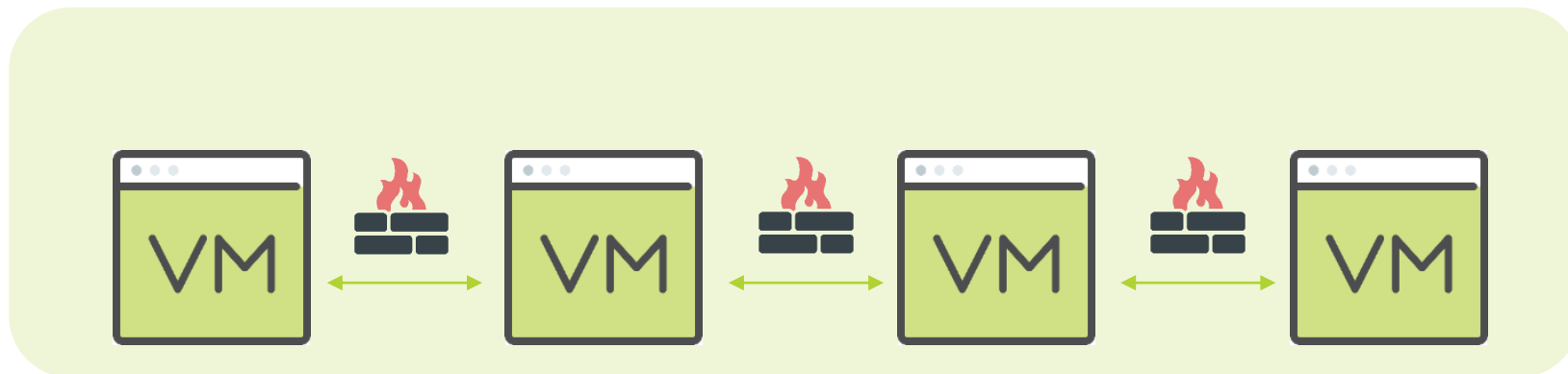
視覺化東西向防火牆

Monitor > Analyze > Act

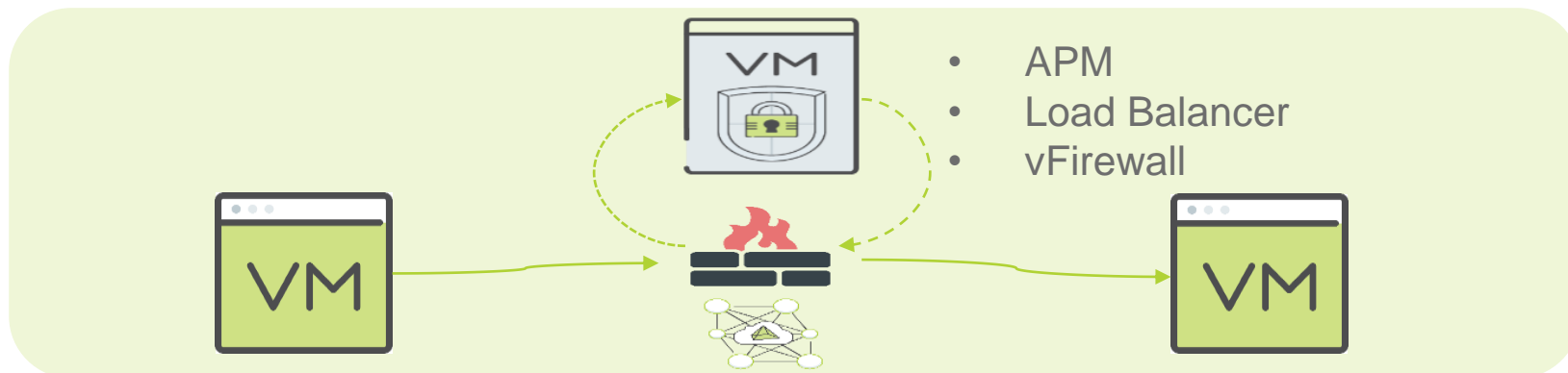
Application
Visualization



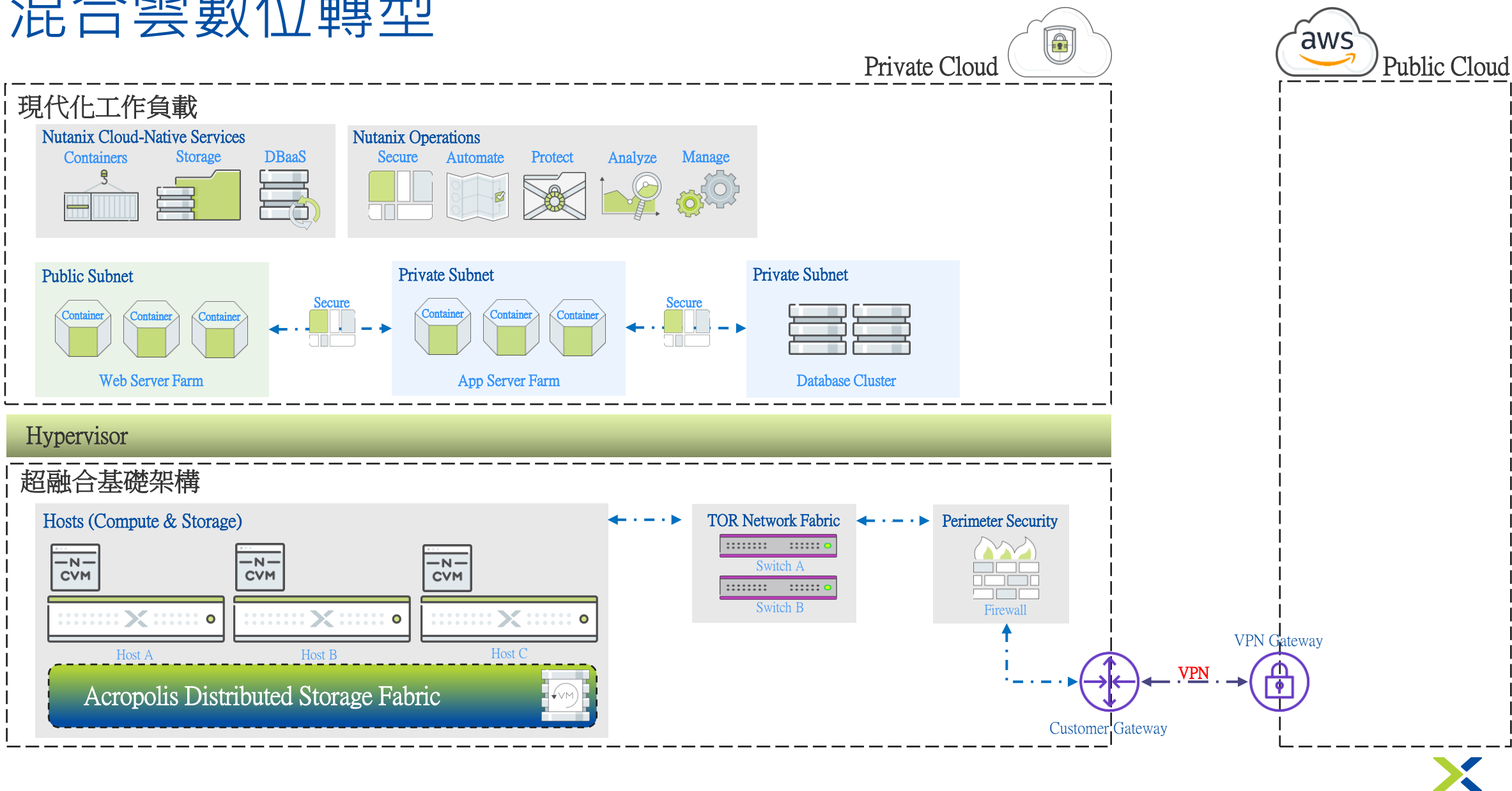
Microsegmentation
(East-West Firewall)



Service Chains
Network Functions

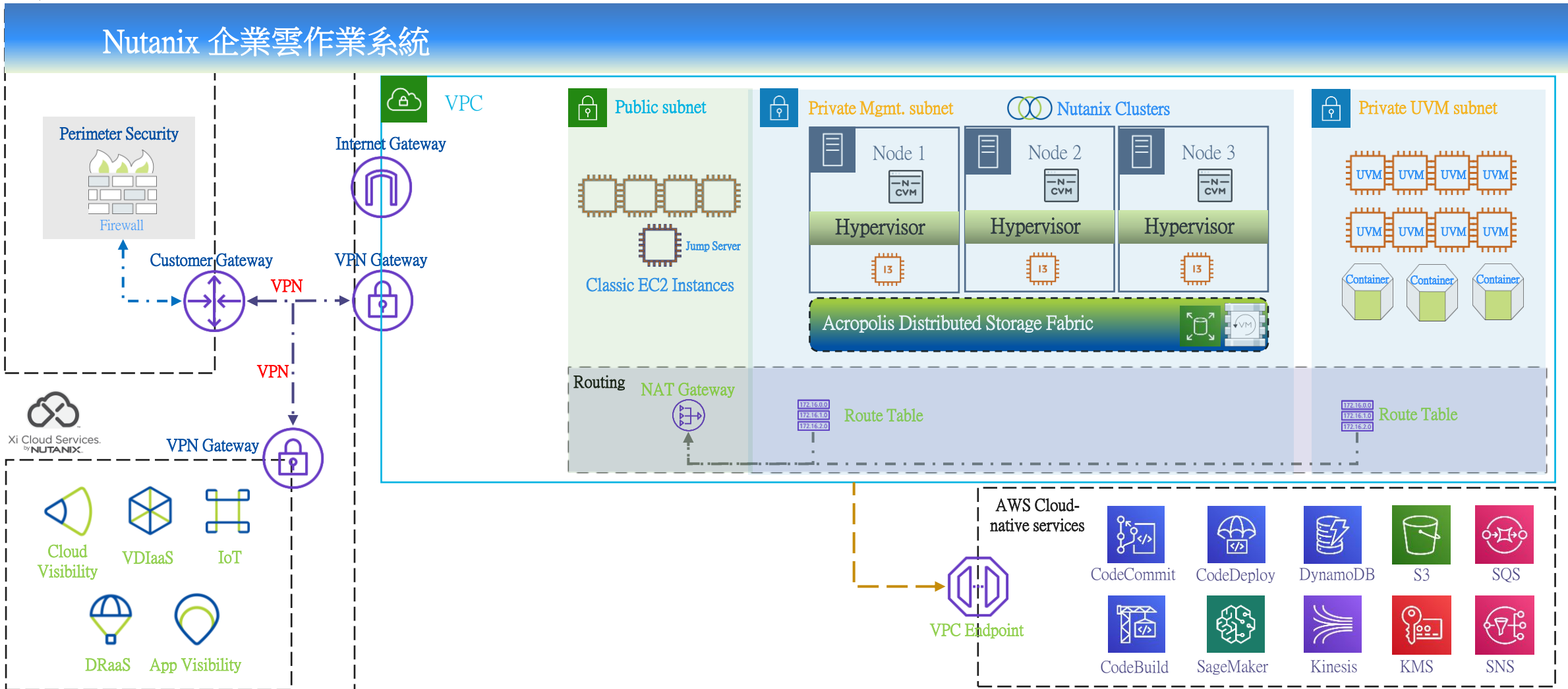


混合雲數位轉型



混合雲數位轉型

Private Cloud



One Platform. Any App. Any Location.

Xi Frame



VDI

Era



Database



Enterprise Apps



Cloud Native

Xi IoT



ROBO & Edge



Dev & Test



Analytics

簡單 - 效率 可靠
彈性 - 經濟 效能
自由 - 硬體 平台

Nutanix 十年專注於超融合

PRIVATE CLOUD

AOS - 原生超融合平台
AHV - 超融合而生的 Hypervisor
智慧 存取 壓縮 複製 - 不可能的任務

Making Things Invisible

PUBLIC CLOUD

Seamless Hybrid Cloud Experience

NUTANIX

Hewlett Packard
Enterprise

DELL EMC

Lenovo

FUJITSU

CISCO

inspur

intel

HITACHI

NEC

IBM

AWS

Azure

Google Cloud



The Nutanix logo is centered on a blue-to-green gradient background. It features the word "NUTANIX" in a bold, white, sans-serif font, followed by a trademark symbol (TM). The background is decorated with large, semi-transparent, light blue geometric shapes that resemble stylized arrows or chevrons pointing in various directions.

NUTANIX™