

2021 PURE全攻略-永遠維持現代化 全方位資料互動智能儲存系統

▶ Better work better life

Dennis

Technology Consultant@ Ivan Information Technology

設立：

Pure Storage:

100%的快閃儲存產業的主流

成立於2009年美國舊金山(Mountview),
台灣分公司成立於2015年,台北市松智路;

團隊：

從應用系統軟體及儲存設備領域

聚集了超過2,100+以上專家,1/3專注研發

超過400項專利

經營現況：

300%以上年成長速度

2015.10月上市,市價新台幣1600億

市場評價：

Gartner 2014~2020 魔力象限評價儲存 **No.1**

IDC2017年度AFA設備應用 **No.1**

AFA2017年度評價 **No.1** 成長企業

2015, 2017 BestPlacesToWork



Pure Storage is a Leader 7 Years in a Row!

Pure is named a leader in the Gartner 2020 Magic Quadrant for Primary Storage Arrays and is placed highest for Ability to Execute AND furthest for Completeness of Vision

Source: Gartner Magic Quadrant for Primary Storage, Santhosh Rao, John Monroe, Roger Cox, Joseph Unsworth, November 30, 2020.

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Figure 1: Magic Quadrant for Primary Storage Arrays



Source: Gartner (November 2020)

Gartner Critical Capabilities 2019

Pure Storage M and X series scored **highest for Server Virtualization.**

Source: Gartner Critical Capabilities for Solid-State Arrays, Roger W. Cox, Joseph Unsworth, Santhosh Rao, John Monroe, 3 Oct., 2019

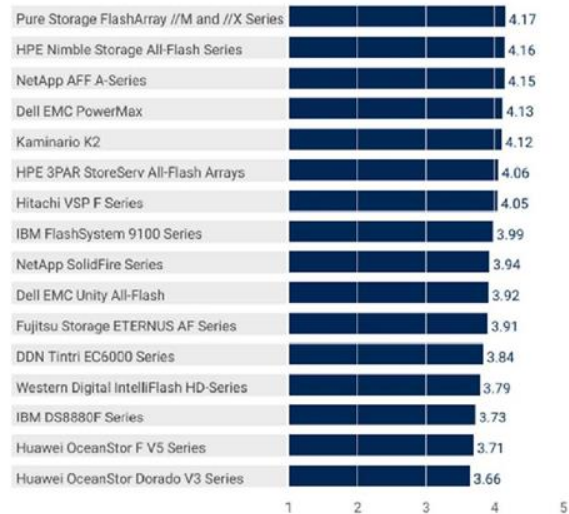
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Figure 2. Vendors' Product Scores for Server Virtualization

Product or Service Scores for Server Virtualization



As of 23 September 2019

© Gartner, Inc.

Access a complementary copy of the report:
<https://www.purestorage.com/microsites/gartner-cc-ss-2018.html>

Gartner Critical Capabilities 2019

Pure Storage M and X series scored **highest** for **Virtual Desktop Infrastructure**.

Source: Gartner Critical Capabilities for Solid-State Arrays, Roger W. Cox, Joseph Unsworth, Santhosh Rao, John Monroe, 3 Oct., 2019

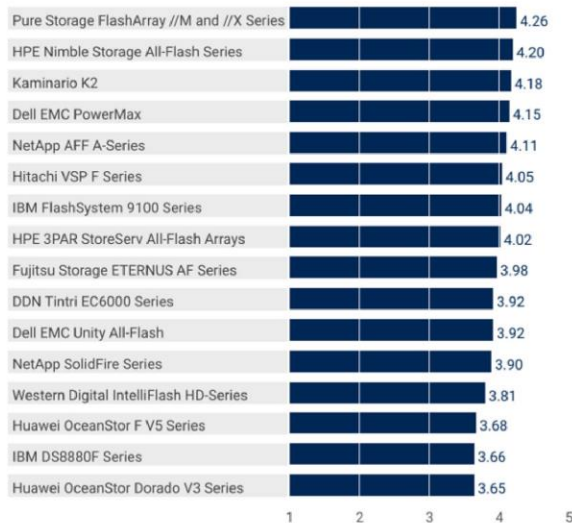
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Figure 5. Vendors' Product Scores for Virtual Desktop Infrastructure

Product or Service Scores for Virtual Desktop Infrastructure



As of 23 September 2019

© Gartner, Inc.

Access a complementary copy of the report:

<https://www.purestorage.com/microsites/gartner-cc-ss-2018.html>

Gartner Critical Capabilities 2019

Pure Storage M and X series scored **4.16 out of 5** for online transaction-processing.

Source: Gartner Critical Capabilities for Solid-State Arrays, Roger W. Cox, Joseph Unsworth, Santhosh Rao, John Monroe, 3 Oct., 2019

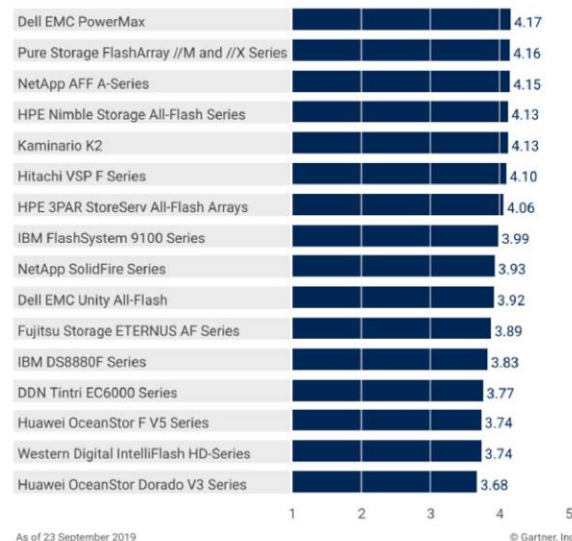
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Figure 1. Vendors' Product Scores for Online Transaction Processing

Product or Service Scores for Online Transaction Processing



As of 23 September 2019

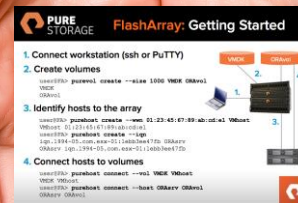
© Gartner, Inc.

Access a complementary copy of the report:

<https://www.purestorage.com/microsites/gartner-cc-ss-2018.html>

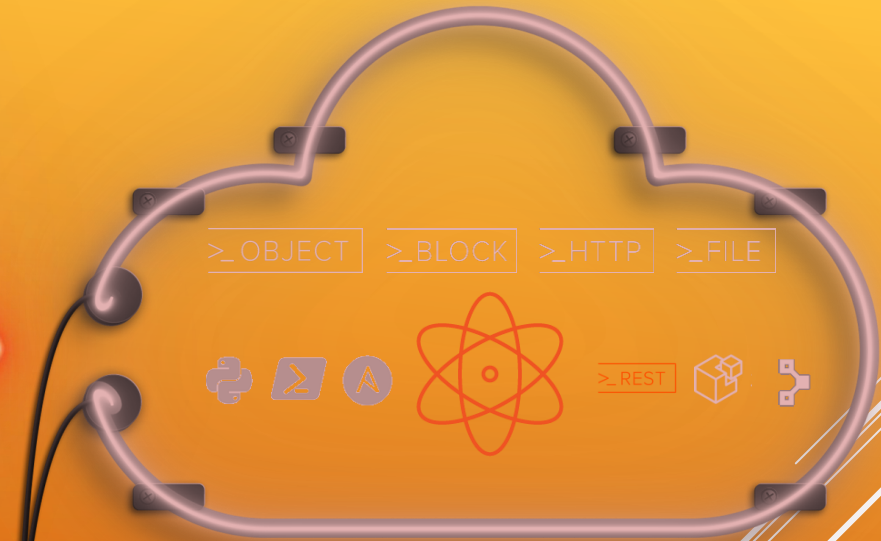
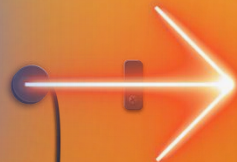
SIMPLICITY

SOFTWARE DRIVEN STORAGE





MANAGE STORAGE
ARRAYS



DELIVER DATA-AS-A-
SERVICE
INTELLIGENT, SIMPLIFIED, &
AUTOMATED

FlashArray™ Delivers a *MODERN DATA EXPERIENCE*



**FAST
MATTERS**



**CLOUD
EVERYWHERE**



**SIMPLE
IS SMART**



**SUBSCRIPTION
TO INNOVATION**



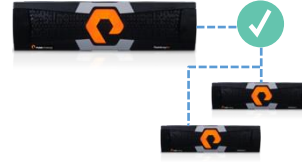
EFFORTLESS IS...



**EVERYTHING
ENCRYPTED**



**NO TIERING OR
PERFORMANCE TUNING**



**DR
BUILT-IN**



**INSTANT SNAPS
ZERO OVERHEAD**



Purity **FA**
REDUCE

Purity delivers the industry's most granular,
comprehensive data reduction – and the
industry's best total efficiency, at 10:1



FlashArray™ SUBSCRIPTION TO INNOVATION

RELEASES

20+

INCLUDED WITH YOUR EVERGREEN SUBSCRIPTION

\$0

PLANNED DOWNTIME

0



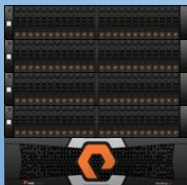


INDUSTRY LEADING NVMe INNOVATION

ALWAYS EVERGREEN - NO FORKLIFT OR MIGRATION

2015

FIRST NVMe
RAM



NVMe NVRAM

2017

FIRST 100%
NVMe
ALL FLASH
ARRAY



DirectFlash
MODULE

DirectFlash
SOFTWARE

2018

FIRST NVMe-
oF SHELF



DirectFlash
SHELF

2019

FIRST NVMe-oF
(RoCE)
WITH DATA
SERVICES



DirectFlash
FLASH

100% FLASH-OPTIMIZED HARDWARE

MODULAR & UPGRADABLE DESIGN



FLASHARRAY
CHASSIS



PCIe/NVMe and
12 Gb/s SAS fabrics

DIRECTFLASH
MODULE (NVMe)

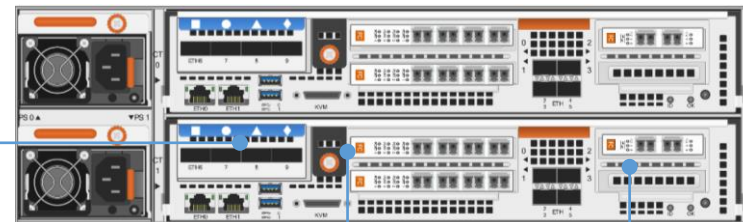


20 in chassis:
DFM or SAS FM

NV-RAM
MODULE



2 or 4 HA
NV-RAM



EXPANSION
SHELVES



NVMe and/or SAS

CONTROLLER
MODULES

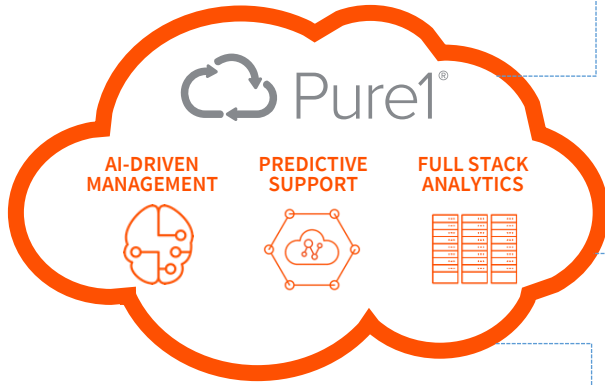


2 HA Controllers
//X10, //X20, //X50,
//X70, //X90

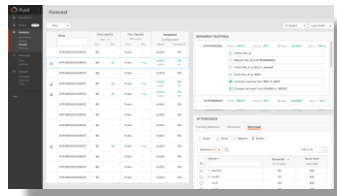
IO MODULES



6 SLOTS
16/32G FC or 10GBase-T,
10/25G or 40G ETHERNET
4x 10Gb ETHERNET
ONBOARD



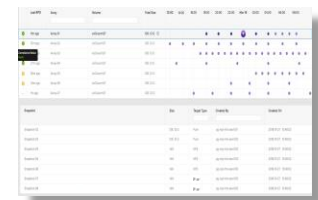
META™ WORKLOAD SIMULATION



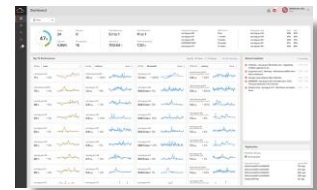
VM ANALYTICS



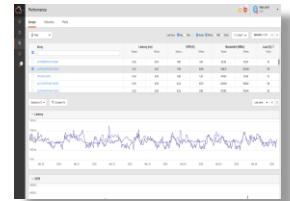
SNAPSHOT CATALOG



GLOBAL DASHBOARD



PERFORMANCE ANALYTICS



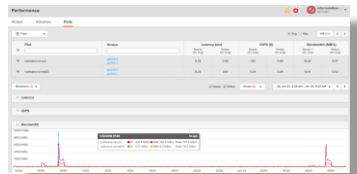
EXPANDED ARRAY VIEW



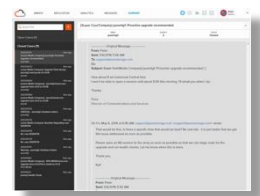
MOBILE DASHBOARD



ACTIVECLUSTER MONITORING



SUPPORT CASES



PREDICTIVE SUPPORT



APIs

> _ REST

PREDICT THE FUTURE

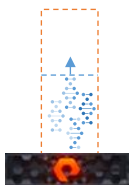
- AI-DRIVEN PERFORMANCE & CAPACITY SIZING



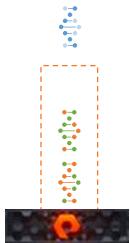
WORKLOAD PLANNER

POWERED BY WORKLOAD DNA

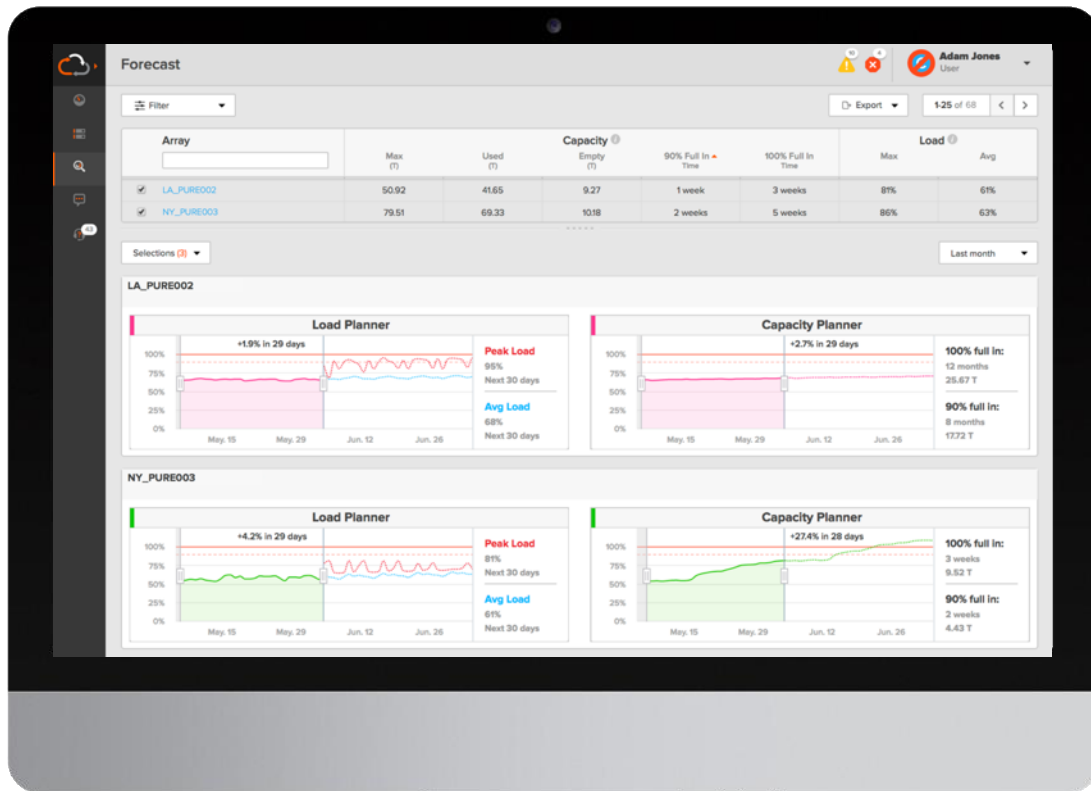
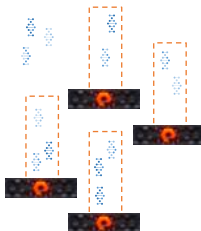
HOW WILL
PERFORMANCE
& CAPACITY
GROW?

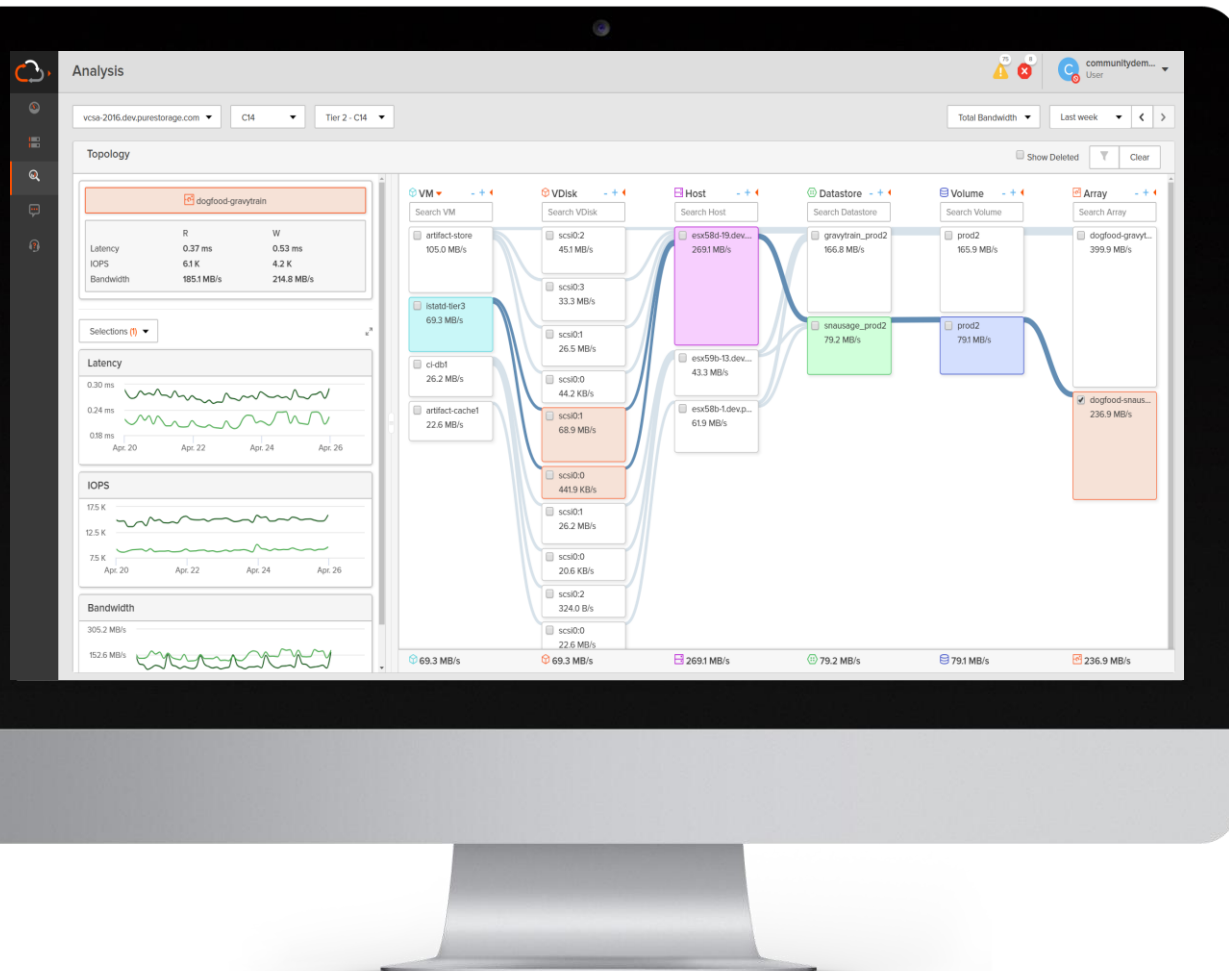


WILL A NEW
WORKLOAD
FIT?



HOW CAN I
OPTIMIZE
PLACEMENT?





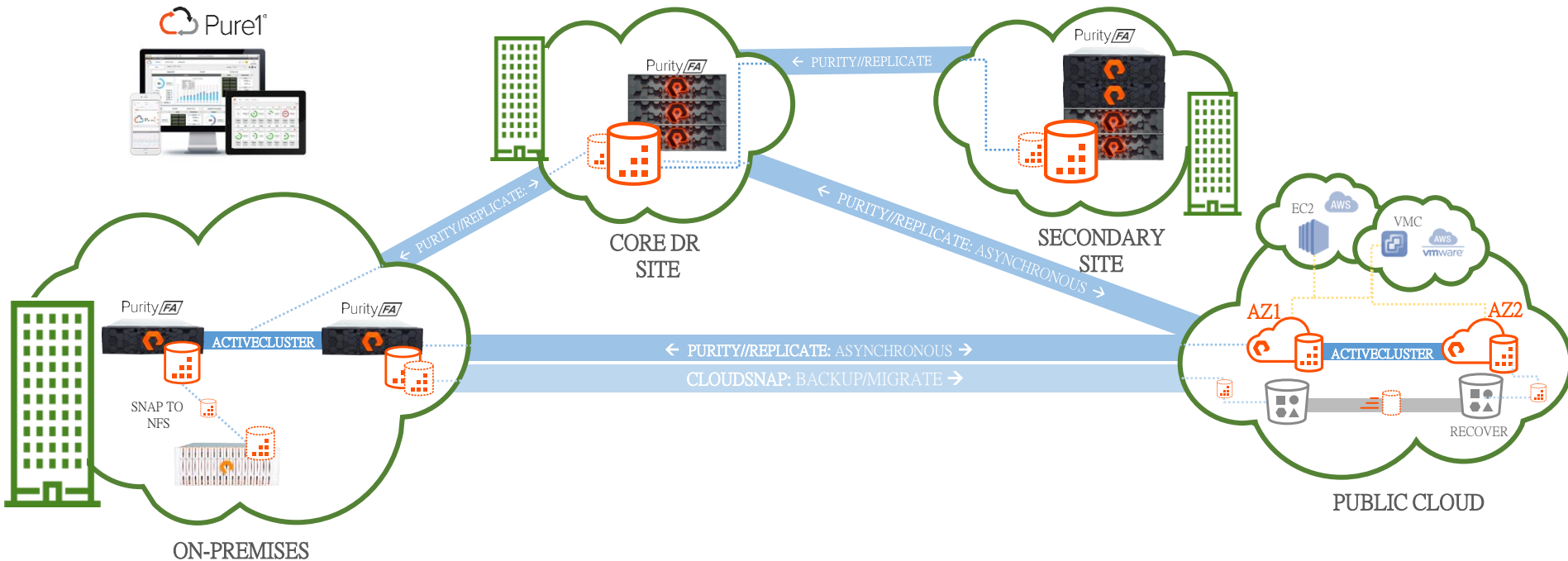
VM ANALYTICS

FULL STACK PERFORMANCE METRICS

- QUICKLY IDENTIFY TOP VMS WITH LATENCY ISSUES
- FIND THE PROBLEMATIC VM QUICKLY CORRELATED WITH A VOLUME
- GET COMPLETE VISIBILITY OF LATENCY, BANDWIDTH, AND IOPS

MULTI-CLOUD DATA PROTECTION & DR

ALL MONITORED BY



THIRD GENERATION FLASHARRAY//X AVAILABLE NOW

NEXT GENERATION

Up to 25% Better
Performance vs //X
R2

ALL NVMe + SCM

100% NVMe from
Entry Level //X10 to
//X90

EVERGREEN™

Up to 50%
performance
increase with
Free Every Three*

OPTIMIZED

for Next
Generation
Purity//FA
Software

FlashArray™ **//X** R3



11TB Raw to 3PBs Effective

HARDWARE AND SOFTWARE OPTIMIZED FOR NEXT GEN PURITY//FA



Purity **FA**

- ▶ Intel Xeon Scalable Processors formerly named Cascade Lake
 - ▶ All-NVMe across all models and capacities (SAS still supported)
 - ▶ Entry Level NVMe capacity with 1TB DirectFlash™ Modules
 - ▶ Optimized to support future software features
- ▶ Software Features available in 5.3
 - ▶ EncryptReduce
 - ▶ DirectMemory Cache
 - ▶ CloudSnap for AWS and Azure
 - ▶ Cloud Block Store for AWS
 - ▶ Next Generation Purity – Stay Tuned!

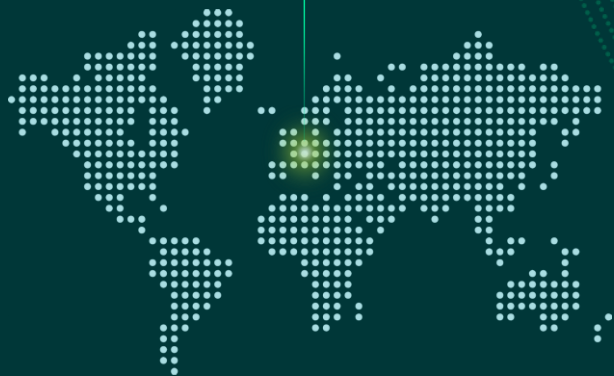
veeam



關於 Veeam

1 + 1 = 3
Pure Storage + Veeam
Better Together

總部在巴爾, 瑞士



76%

Global 2000 與 F500
都是 Veeam 的客戶



160

國家 & 全球擁有
4100+ 員工



超過36萬5千家

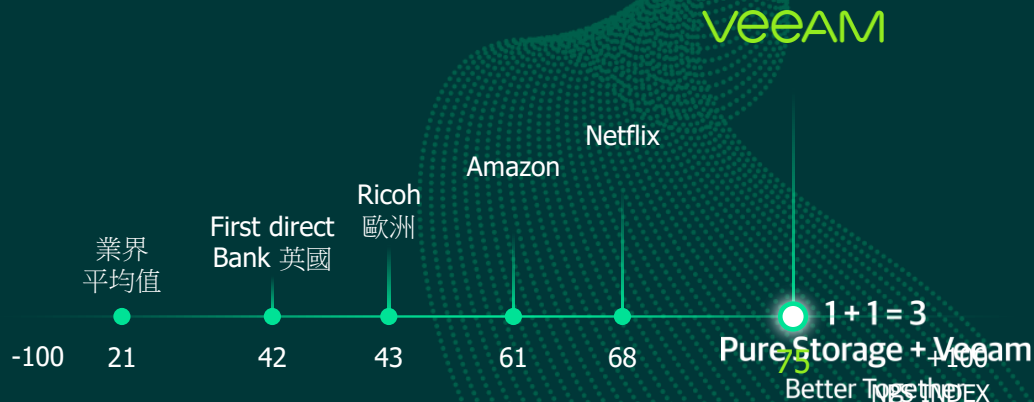
以上的客戶並
連續12年持續成長中



\$10億美金

營業額 (Q2 2019)

客戶滿意度是業界平均值的 3.5 倍



VEEAM

 PURE STORAGE

Gartner

再次被評選為領導者！

The 2020 Gartner 資料中心備份與還原魔術象限再一次認可 Veeam 是領導者。

Ovum 

突出的領導者

針對雲端紀元的資料可用性及保護解決方案中, Veeam 是明顯的市場領導者。

 **IDC**

市佔率成長 #1

Veeam 在 2019 上半年透過每年超過 22.4% 的成長率領先資料保護及還原市場。



Veeam 在 Gartner Peer Insights Customer's Choice for Data Center Backup and Recovery Software 問卷中取得 4.7 (總分為 5) 的 star distinction 高分。

FORRESTER

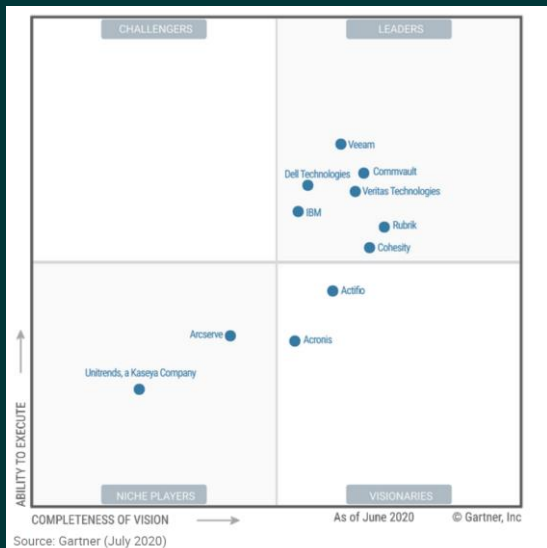
團體中的一個領導者

Forrester 在 Data resiliency solutions (Q3 2019) 中顯示 Veeam 是領導者

Pure Storage + Veeam
Better Together

Gartner

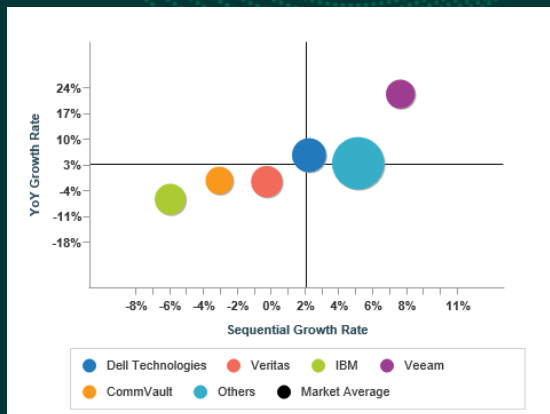
Gartner: 2020 Magic Quadrant for Data Center Backup and Recovery Solutions



IDC

Analyze the Future

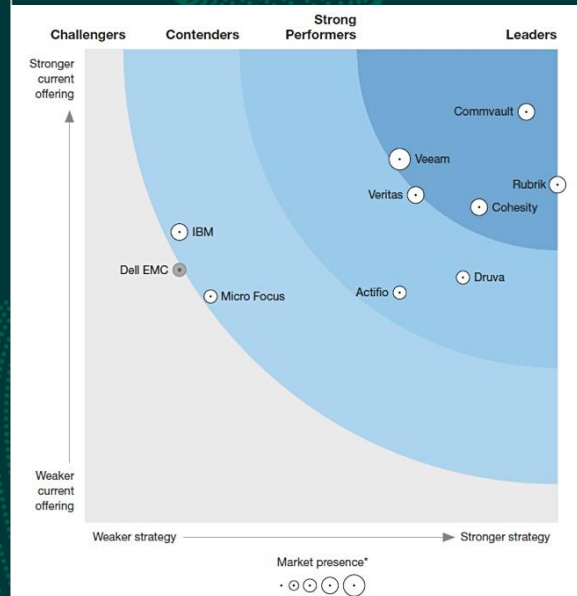
IDC: 2019H1 Semi-Annual Software Tracker Report



Source: IDC, Semi-Annual Software Tracker, 2019H1
Note: Worldwide Data, circle size represents market share

FORRESTER®

Forrester Wave: Data Resiliency Solutions Q3 2019



Better Together

Figure 1. Magic Quadrant for Data Center Backup and Recovery Solutions



Source: Gartner (July 2020)

Gartner 連續第四年將 Veeam 評選為領導者象限, 並在這次將 Veeam 放置在執行力最高的位置上

Veeam 是資料中心備份與還原解決方案領導者!

82%

財經五百大
公司在客群內

375K+

全球客戶
並持續增加中

75

Net Promoter
Score 是平均值的
三倍

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Pure Storage + Veeam
Better Together

#1 虛擬化平台資料保護解決方案

2500+

已導入的客戶數量

450+

2019 年新增客戶

120+

在 2019 年註冊的新經銷夥伴
(台灣新增 365 個合作夥伴)

450+

VMTSPs (2019 新增 300 位)

320+

VMSPs (2019 新增 200 位)

15

VMCEs (2019 新增 10 位)

Top 4

台灣市佔率
(唯一專注在軟體的原廠)

2x

台灣員工 in 2019

2 + 2 + 7

2 代理商
2 白金經銷商
7 黃金經銷商

>35%

YoY 利潤成長率

深入且持續耕耘台灣市場



提供無與倫比的資料管理與保護, 進一步重新應用你的資料驅動跨資料中心與雲端的創新



簡單



靈活



可信賴

1 + 1 = 3
Pure Storage + Veeam
Better Together

虛擬

vmware®

Microsoft
Hyper-V

NUTANIX AHV

實體

Windows

Linux

ORACLE
SOLARIS



SaaS

Office 365

OneDrive

雲端

Microsoft Azure

veeam | CSPARTNER PROGRAM

aws IBM Cloud



監控與運作分析



運作協同



備份與備援

DataLabs

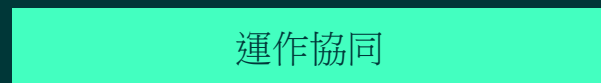
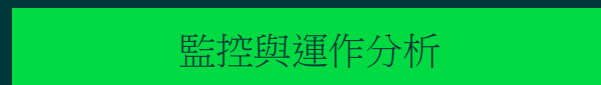


Universal Storage APIs



Object Storage

1 + 1 = 3
Pure Storage + Veeam
Better Together



Veeam ONE

Veeam Availability Orchestrator

Veeam Backup for Microsoft Office 365

Veeam Backup & Replication

Veeam Backup & Replication
+
Veeam ONE
=
Veeam Availability Suite

1 + 1 = 3
Pure Storage + Veeam
Better Together

► VMware Compatibility Guide

► https://www.vmware.com/resources/compatibility/search.php?deviceCategory=vsanps&details=1&solutionTypes=1&page=1&display_interval=10&sortColumn=Partner&sortOrder=Asc

Partner Name	Solution Name	Solution Version	Solution Type	KB Article	Supported Releases
Veeam	Veeam Backup & Replication	9.5	Data Protection	KB Article	vSAN 6.6 (ESXi 6.5.0d), ESXi 6.5 (vSAN 6.5), ESXi 6.0 U3 (vSAN 6.2 Update 3)
Veeam	Veeam Backup & Replication	9.5 Update 3a	Data Protection	KB Article	ESXi 6.7 (vSAN 6.7), vSAN 6.6 (ESXi 6.5.0d), ESXi 6.5 U2 (vSAN 6.6.1 U2)
Veeam	Veeam Backup & Replication	9.5 Update 4	Data Protection	KB Article	ESXi 6.7 (vSAN 6.7)
Veeam	Veeam Backup & Replication	9.5 Update 4a	Data Protection	KB Article	ESXi 6.7 U2 (vSAN 6.7 Update 2), ESXi 6.7 U1 (vSAN 6.7 Update 1)
Veeam	Veeam Backup & Replication	9.5 Update 4b	Data Protection	KB Article	vCloud Director 9.7, ESXi 6.7 U3 (vSAN 6.7 Update 3), VMware Cloud on AWS SDDC 1.9, VMware Cloud on AWS SDDC 1.8
Veeam	Veeam Backup & Replication	10.0	Data Protection	KB Article	ESXi 7.0 (vSAN 7.0), ESXi 6.7 U3 (vSAN 6.7 Update 3), VMware Cloud on AWS SDDC 1.11, VMware Cloud on AWS SDDC 1.10, VMware Cloud on AWS SDDC 1.9

** Till now, Veeam is still the only vendors supports vSphere 7

The Veeam logo is displayed in a light green, lowercase, sans-serif font in the top right corner. A thick green diagonal line runs from the top center towards the bottom right, passing behind the text.

veeam

VEEAM BACKUP & REPLICATION

On the right side of the slide, there are several thin, white, parallel diagonal lines that intersect with the thick green diagonal line, creating a sense of motion or data flow.

整合精細還原選項的影像層級備份

內建相關應用程式感知處理:

- Microsoft Active Directory
- Microsoft Exchange
- Microsoft SQL
- Microsoft SharePoint
- Oracle Databases

虛擬機器的備份

- ✓ 傳輸當下縮小資料量
- ✓ 異動區塊的追蹤感知
- ✓ 無代理程式備份
- ✓ 256-位元加密
- ✓ 政策驅動的備份自動化



完整虛擬機器



幾分鐘內的即時虛擬機還原



虛擬機器內的檔案



應用程式的精細還原



還原為公有雲虛擬機器

豐富的還原選項



veeam

提升備份的效能

VEEAM 整合 PURE STORAGE 儲存快照



Backup from Storage Snapshots

降低對虛擬機營運的影響

簡化排程

無代理程式, 應用程式感知
的一致性



Veeam Explorers™ for Storage Snapshots

RTO / RPO <15 分鐘

精細還原

即時能見度



On-Demand Sandbox™ for Storage Snapshots

驗證過的可還原度

測試, 開發, 企業培訓及問
題分析

低風險部署



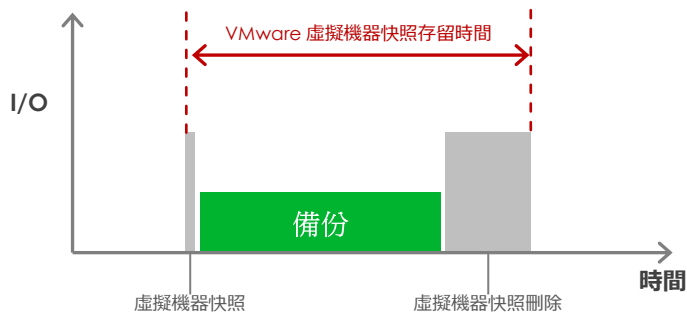
Snapshot Orchestration

應用程式一致性

進一步降低 RPO

僅快照為主的 Veeam Jobs

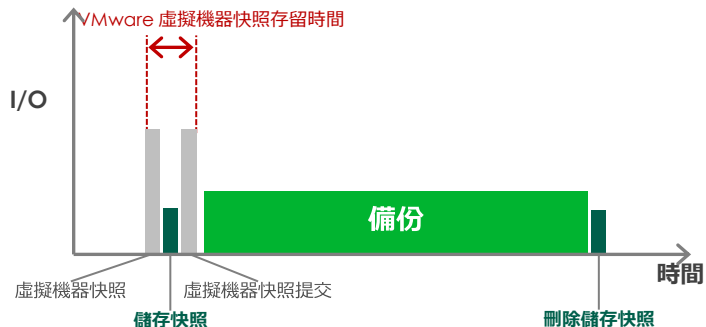
標準 VM 備份



若要在 VMware Storage API 搭配「變更資料區塊追蹤」使用「永久增量映像層級備份」，便需要有虛擬機器快照。不過，由於備份期間的所有變更都已寫入快照，而且在刪除快照時，需要將這些變更提交到主要儲存裝置，因此虛擬機器快照有一些缺點。這會導致：

- 快照刪除時發生高儲存負載
- 快照刪除時 VM 可能會停止運作
- 刪除快照將需要很長時間

使用 Pure 快照整合



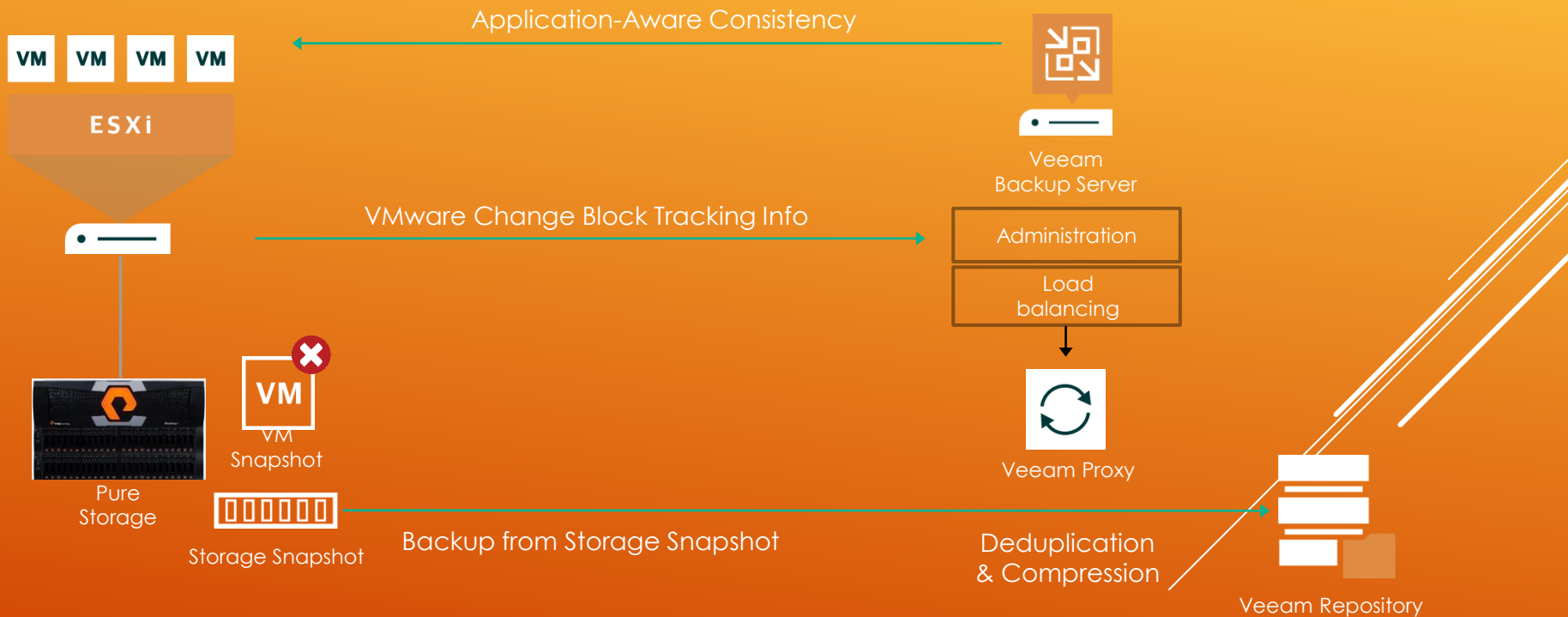
搭配 Veeam 獨特的無代理程式應用程式感知備份引擎，Veeam 可在 VMware 快照之後直接建立儲存快照，使其保持一致的狀態。建立儲存快照後，Veeam 將立即釋出 VMware 虛擬機器快照。

由於可以在沒有額外負荷下刪除儲存快照，因此不會對 VM 產生負面影響。

Veeam 可以使用 VMware 「變更資料區塊追蹤」直接從儲存快照中讀取。

利用 STORAGE 快照進行備份 (FOR VMWARE)

營運環境影響大幅減少並且縮短 RPOs

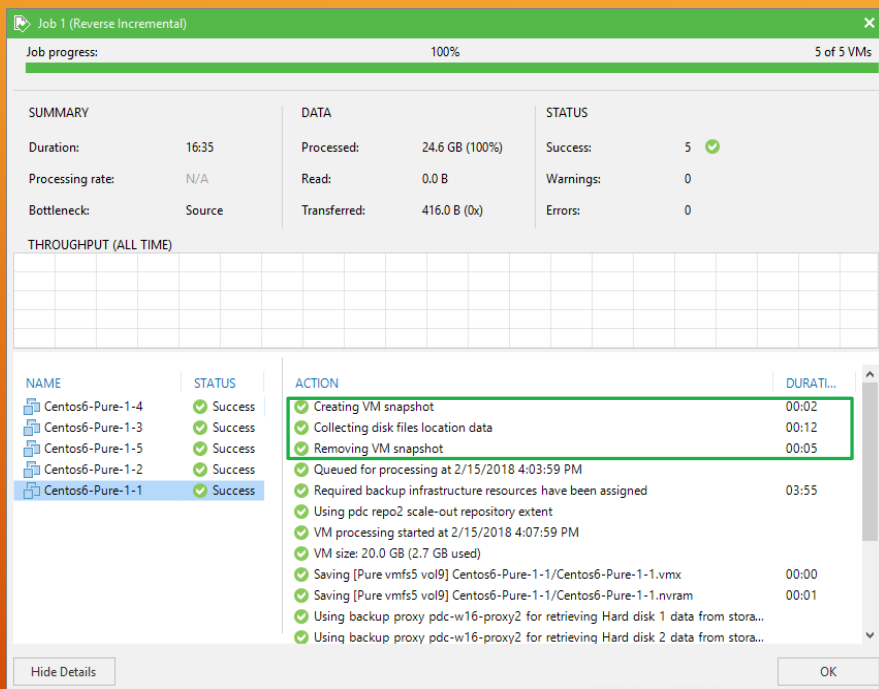


Summary			Data		Status	
Duration:	3:14:42		Processed:	129.2 GB (87%)	Success:	4
Processing rate:	14 MB/s		Read:	124.1 GB	Warnings:	0
Bottleneck:	Source		Transferred:	48.6 GB (2.6x)	Errors:	0

VM name	Status	
SC5M02	Success	
SCORCH01	Success	
SCVMM01	Success	
SC5M01	Success	
SQLSC01	100%	
SCOM12	Pending	

Action	Duration
Queued for processing at 5/19/2013 8:54:51 PM	
Required backup infrastructure resources have been assigned	
VM processing started at 5/19/2013 10:17:02 PM	
VM size: 120.0 GB (95.8 GB used)	
Using source proxy BRproxy01.lab.local [hotadd]	
Indexing guest file system	0:06:20
Preparing guest for hot backup	0:01:39
Creating snapshot	0:00:31
Releasing guest	0:01:43
Saving [LUN03 - LAB VMs] HDL_SQLSC01/HDL_SQLSC01.v...	
Saving [LUN03 - LAB VMs] HDL_SQLSC01/HDL_SQLSC01.v...	0:00:01
Saving [LUN03 - LAB VMs] HDL_SQLSC01/HDL_SQLSC01.n...	0:00:01
Hard Disk 1 (40.0 GB) 21.0 GB read at 13 MB/s [CBT]	0:27:35
Hard Disk 2 (40.0 GB) 24.6 GB read at 16 MB/s [CBT]	0:26:45
Hard Disk 3 (40.0 GB) 5.2 GB read at 6 MB/s [CBT]	0:15:12
Truncating transaction logs	0:03:51
Removing VM snapshot	0:27:36

- 此範例中，開啟 VMware 虛擬機器快照大約需要 34 分鐘。
- Veeam 使用平行磁碟備份以縮短時間範圍，但 VMware 虛擬機器快照已開啟一段很長的時間。
- 這導致 VMware 虛擬機器快照提交大約需要 28 分鐘，在儲存體中具有高 IO，並且可能對 VM 的成效能造成影響

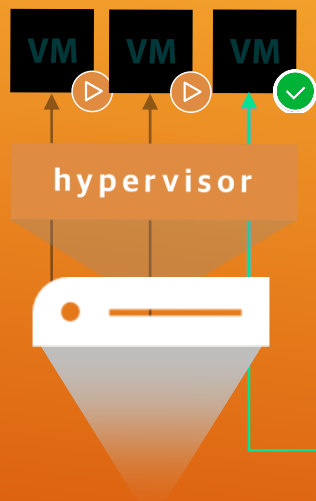


- **VMware 虛擬機器快照只會在建立儲存快照之前開啟。**
(此範例中為 12 秒)
- 它會在建立虛擬機器快照後，直接在後台建立 **Pure 快照**。
- 幾乎即時的 VMware 虛擬機器快照提交 **(此範例中為 5 秒)**
- 可與 **FC/iSCSI VMware 資料儲存** 搭配使用

透過 PURE STORAGE 快照 INSTANT VM RECOVERY

在3-5分鐘內即時還原虛擬機器

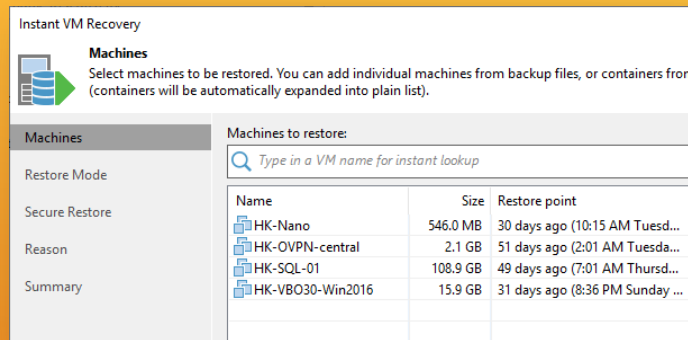
可同時啟動多個虛擬機，且沒有數量上限



在數分鐘內
便可以上線！

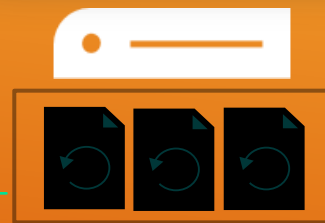


vPower®



線上轉移 / Migrate

Production Storage



備份儲存空間

or

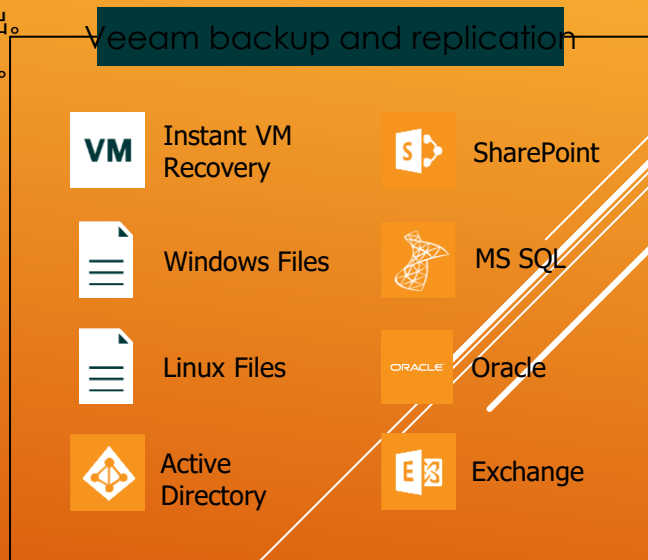
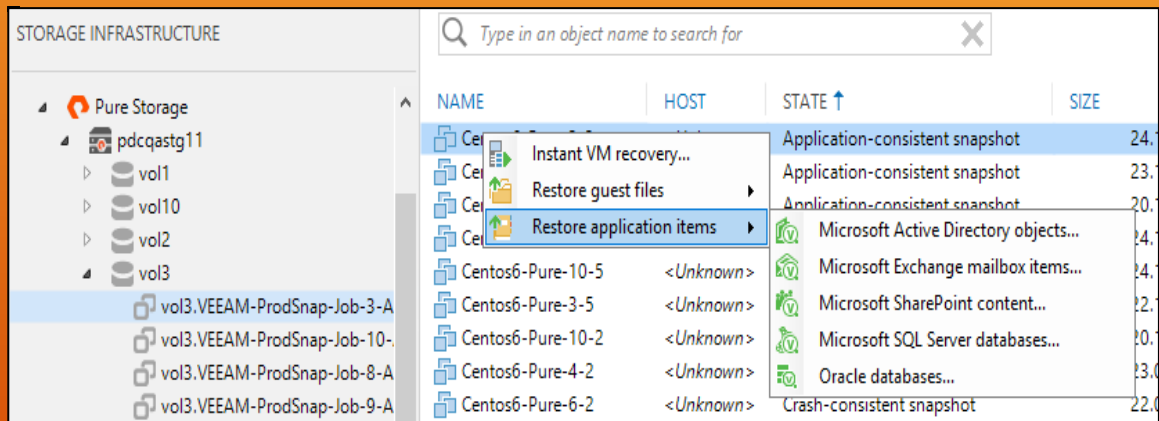
Pure Storage 快照

已壓縮或
重複資料已刪除
的備份檔或快照

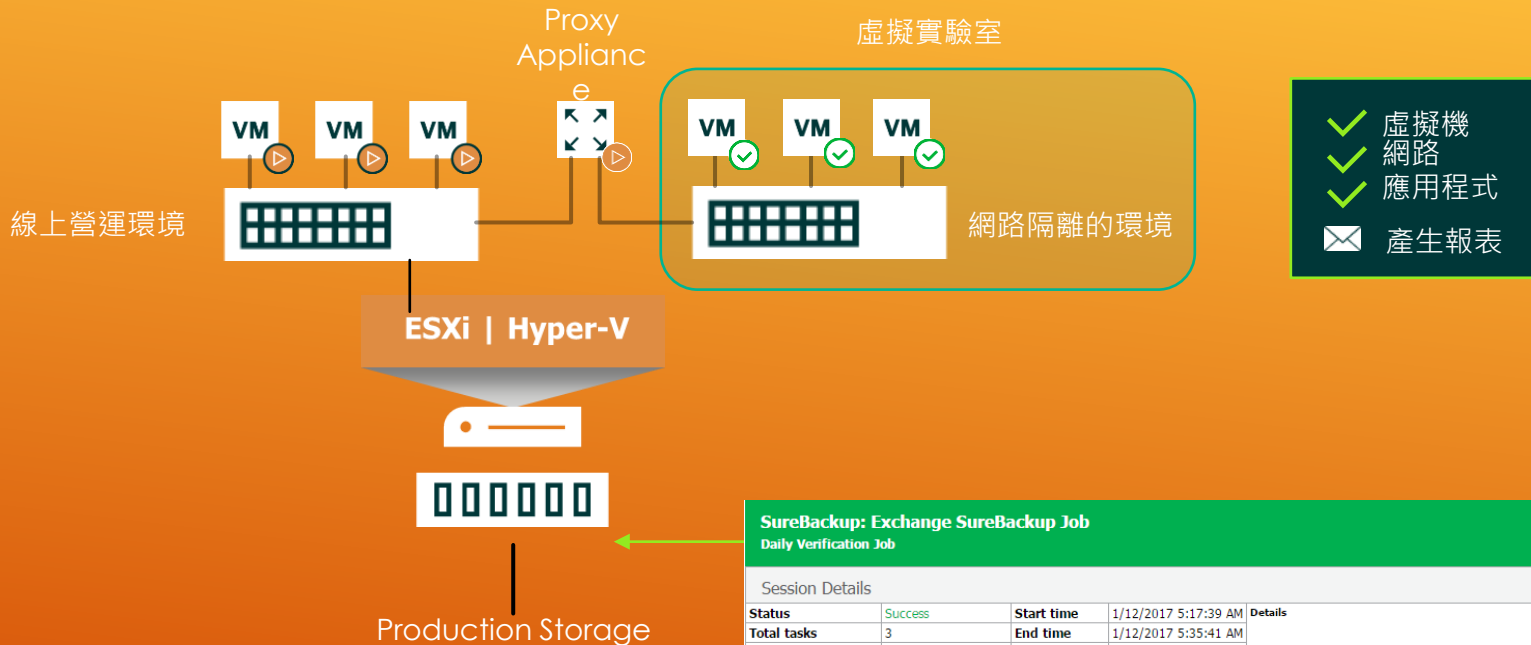
從 PURE STORAGE 快照執行 VEEAM EXPLORER

Veeam 直接從 **Pure** 快照還原 VM (Instant VM Recovery)、單一檔案、應用程式項目，以及資料庫

- 易於使用的介面。自動偵測新快照，而且可啟動還原。
- Veeam Backup 免費版僅提供 VM 和客體檔案還原功能。應用程式項目和資料庫皆可匯出。
- Veeam Backup & Replication 企業版提供其他應用程式項目並將資料庫還原到原始位置。



全自動的備份驗證 (沙箱驗證)



SureBackup: Exchange SureBackup Job

Daily Verification Job

Session Details

Status	Success	Start time	1/12/2017 5:17:39 AM	Details
Total tasks	3	End time	1/12/2017 5:35:41 AM	
Processed tasks	3	Duration	0:18:01	
Successful tasks	3	Warning tasks	0	
Failed tasks	0	Skipped tasks	0	
Progress	100 %			

Virtual machines status

VM name	Status	Start time	End time	Heartbeat test	Ping test	Custom script test	Validation test
dns01	Success	1/12/2017 5:17:39 AM	1/12/2017 5:21:35 AM	Success	Success	Disabled	Disabled
dc01	Success	1/12/2017 5:17:39 AM	1/12/2017 5:29:04 AM	Success	Success	Success	Success
exch01	Success	1/12/2017 5:17:39 AM	1/12/2017 5:32:51 AM	Success	Success	Success	Success

從 PURE STORAGE 快照執行 SUREBACKUP