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面臨資安風險
如何確保AD的持續性和可靠性

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議程

- AD的重要性及管理員面臨恢復AD的挑戰
- 微軟對恢復AD的標準方式
- 如何借助Quest工具快速恢復AD正常運作？
- 雲端及混和環境應該怎麼做？

AD的重要性
管理員面臨恢復AD的挑戰

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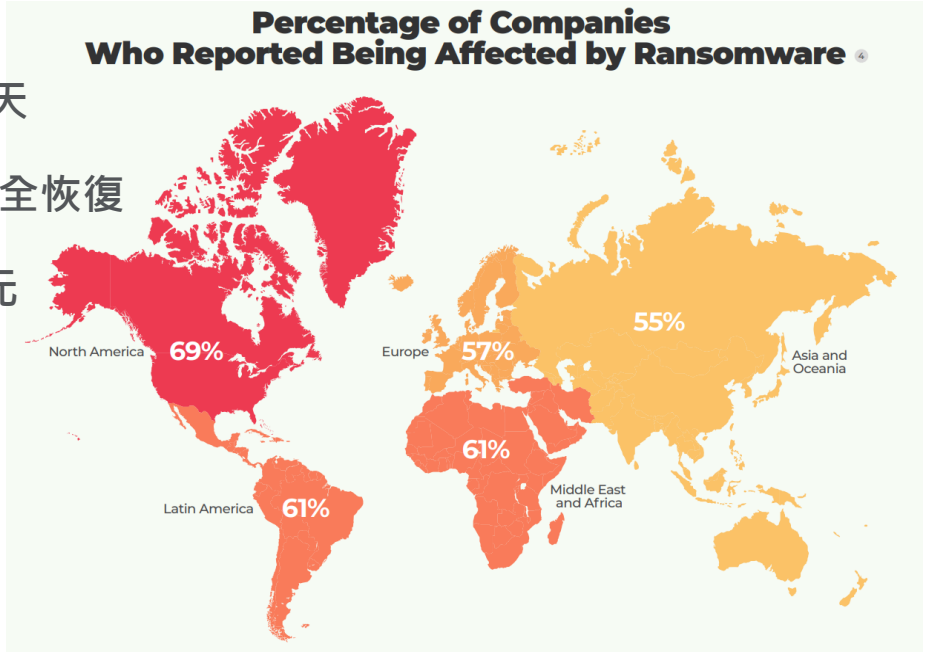
企業需要具備更安全的網路環境

- 全球超過 50% 的企業公開報告遭受勒索軟體攻擊
- 支付贖金的人中有 34% 未能取回數據
- 由於勒索軟體攻擊，平均停機時間為 21 天
- 企業平均需要花費287 天才能從攻擊中完全恢復
- 2020 年勒索軟體的估計成本為208 億美元



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06/07/2021

Gartner

How to Recover From a Ransomware Attack Using Modern Backup Infrastructure

Published 4 June 2021 - ID G00738061 - 40 min read

By Analysts Fintan Quinn

“The restore process from many well-documented ransomware attacks has been hindered by not having an intact Active Directory restore process.”

Active Directory是企業重要關鍵系統

組織使用 Active Directory 來管理身份並提供對業務資源的訪問

Active Directory
主要身份驗證和提供訪問權限

資料庫
用於業務分析和研究的結構化數據

檔案
用於公司內外交流的非結構化數據

應用服務
提供企業業務所需的工具

端點設備
電腦、平板、手機...等業務資源設備

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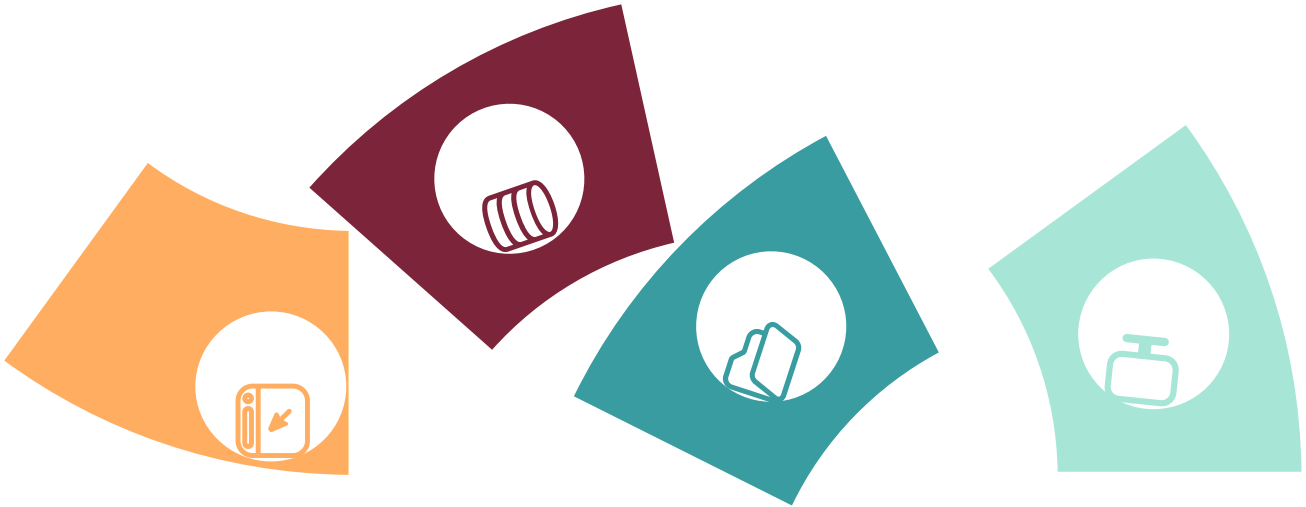
當沒有了 AD ...

... 服務將無法使用

“如果無法恢復網域控制器, 我們將無法恢復任何東西”



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企業面臨的AD恢復挑戰

以手動還原AD/DC費時費力，且Offline方式進行影響企業運作

傳統備份不提供"精細"還原，也無法得知哪些物件或屬性已被更改或刪除

無法還原整個AD網域和樹系

無法驗證備份檔的有效性，以確保AD/DC還原之可行性

當伺服器或作業系統損壞，無法做到裸機還原

無法備份還原Azure AD

無法將還原作業委派給其他管理員，以減輕負擔

需要提供災難還原計劃和工作流程，以符合合規性要求

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微軟對恢復AD的標準方式

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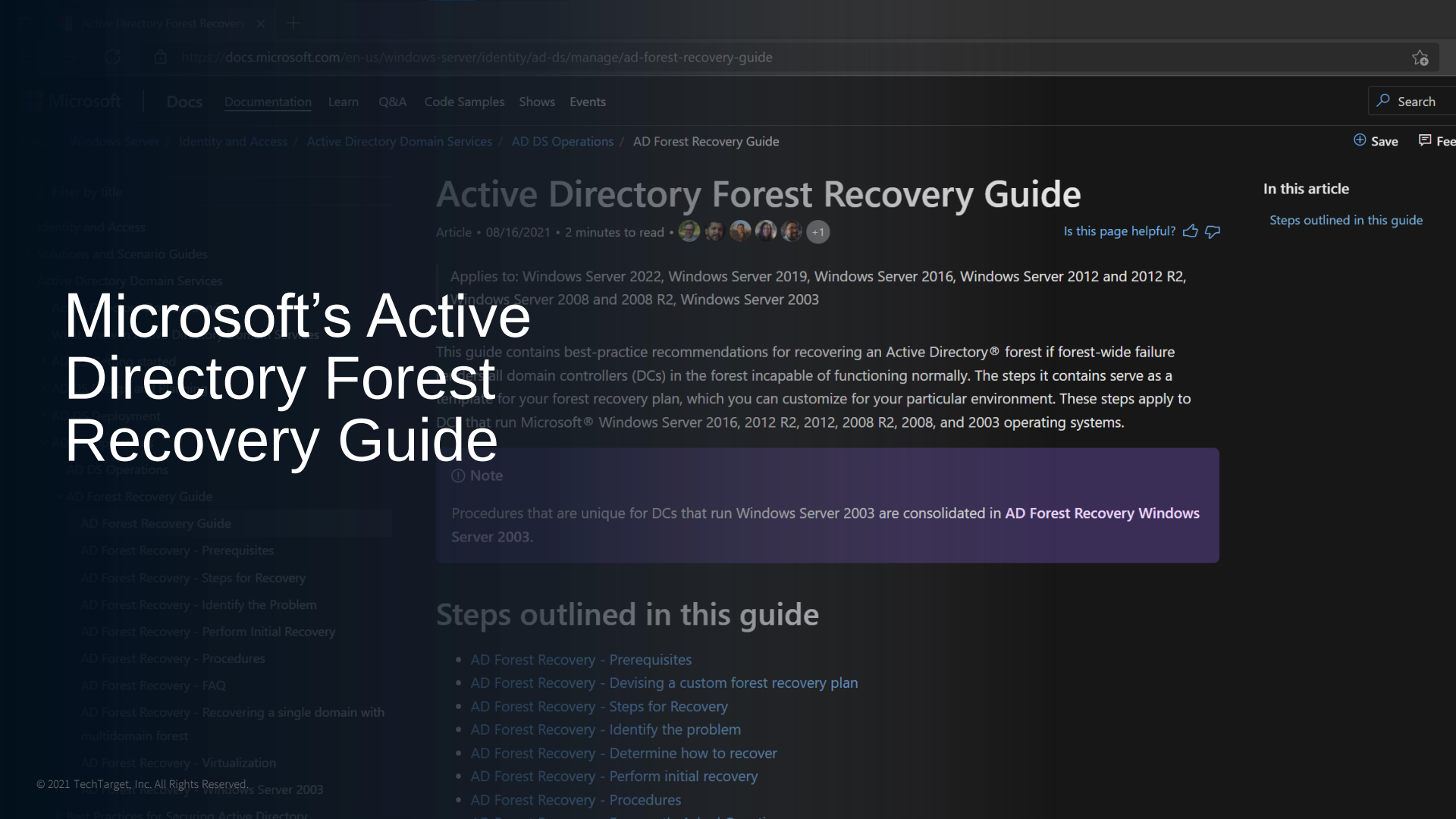
Microsoft's Active Directory Forest Recovery Guide



手動AD備份和恢復

Manual Backup

需要與每一個 DC手動備份
非常耗時

Manual Restore

手動還原備份，將WinRE映像
恢復到裸機伺服器

Custom Win Recovery Environment

為每台DC伺服器自定義WinRE，
包含安裝驅動程式

Reconfigure AD Verify AD

重新配置及驗證AD/DC同步
漫長且過程復雜容易出錯

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透過Quest工具
快速恢復AD正常運作

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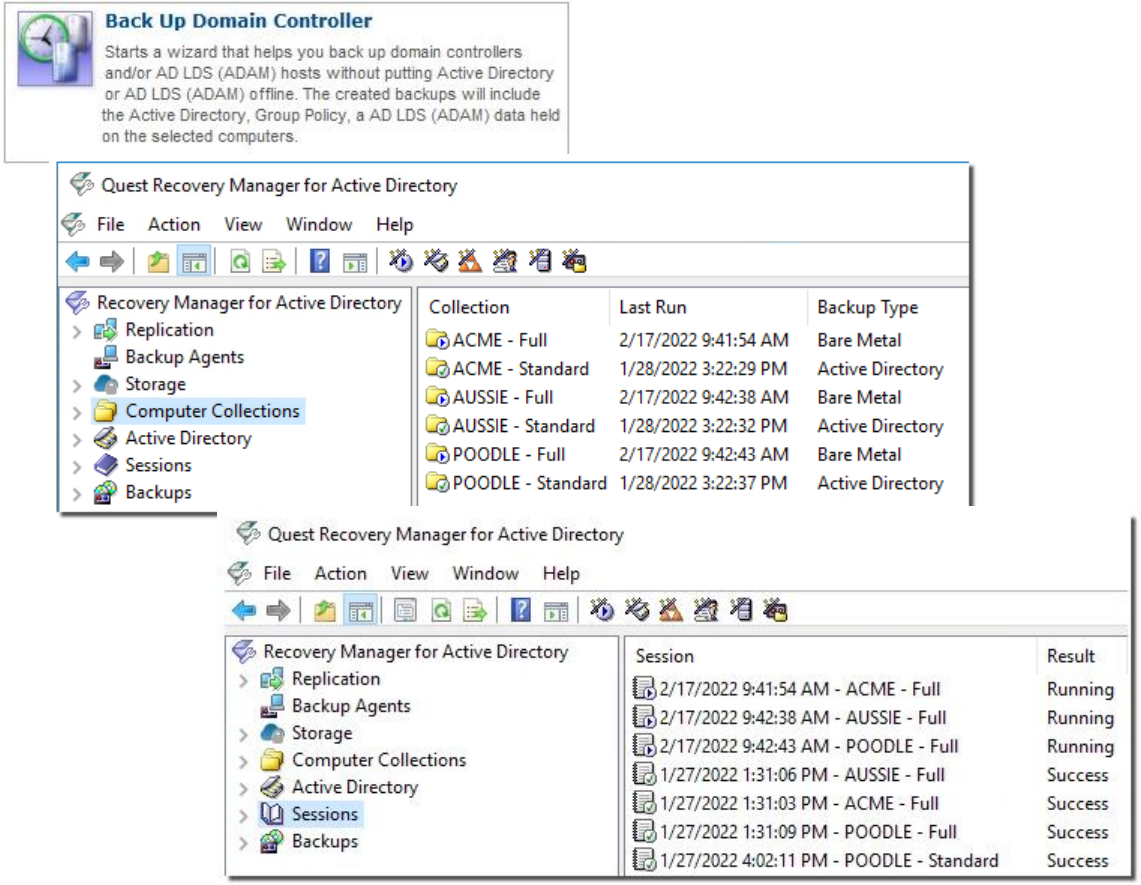
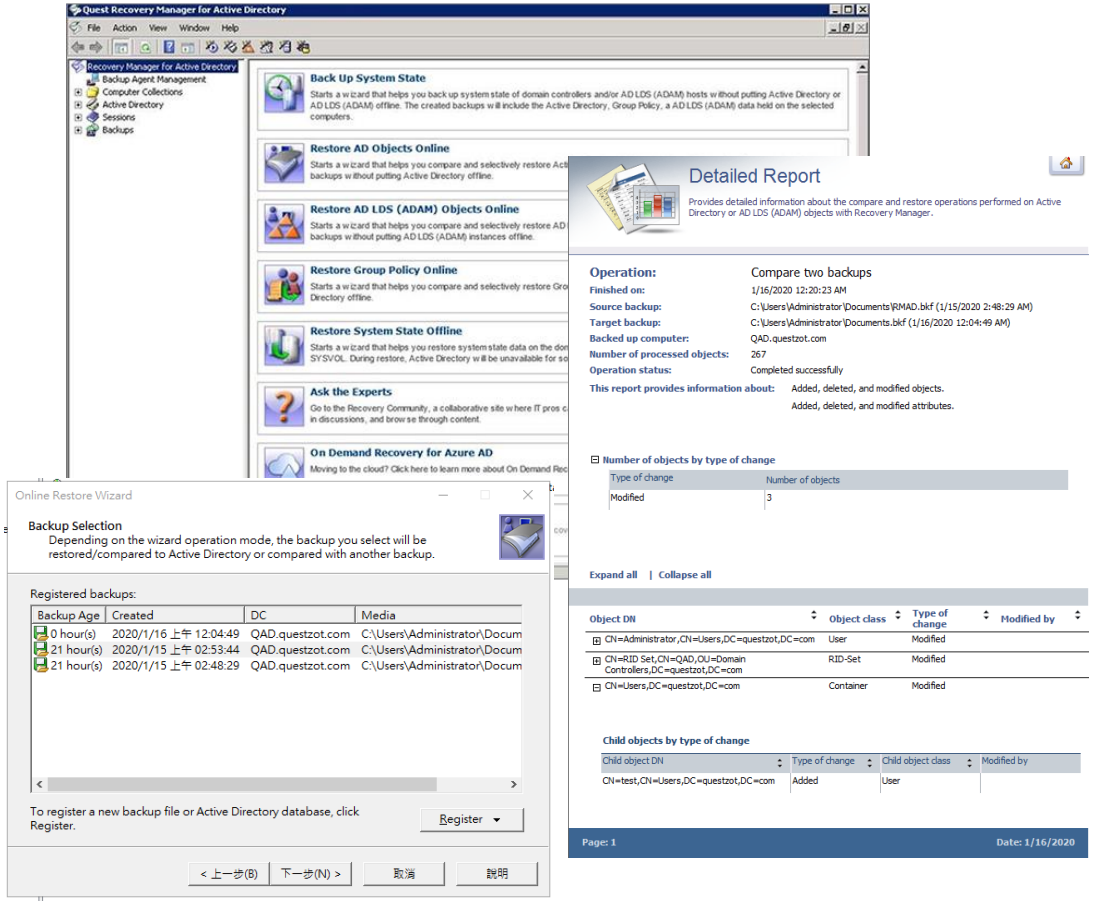
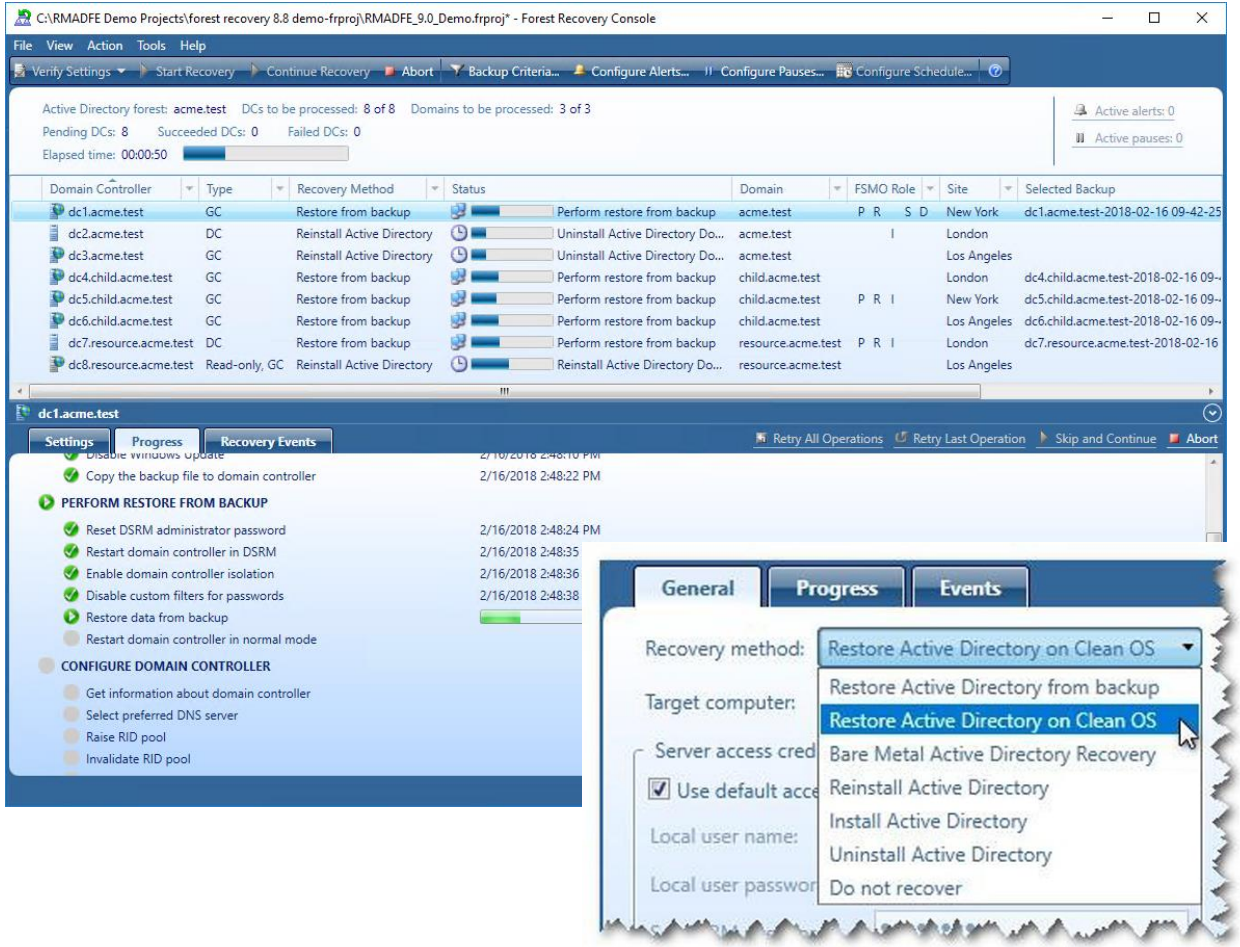
遠端自動化 AD備份


Back Up Domain Controller
Starts a wizard that helps you back up domain controllers and/or AD LDS (ADAM) hosts without putting Active Directory or AD LDS (ADAM) offline. The created backups will include the Active Directory, Group Policy, a AD LDS (ADAM) data held on the selected computers.
Quest Recovery Manager for Active Directory
File Action View Window Help
Recovery Manager for Active Directory
Replication
Backup Agents
Storage
Computer Collections
Active Directory
Sessions
Backups
Collection Last Run Backup Type
ACME - Full 2/17/2022 9:41:54 AM Bare Metal
ACME - Standard 1/28/2022 3:22:29 PM Active Directory
AUSSIE - Full 2/17/2022 9:42:38 AM Bare Metal
AUSSIE - Standard 1/28/2022 3:22:32 PM Active Directory
POODLE - Full 2/17/2022 9:42:43 AM Bare Metal
POODLE - Standard 1/28/2022 3:22:37 PM Active Directory
Quest Recovery Manager for Active Directory
File Action View Window Help
Recovery Manager for Active Directory
Replication
Backup Agents
Storage
Computer Collections
Active Directory
Sessions
Backups
Session Result
2/17/2022 9:41:54 AM - ACME - Full Running
2/17/2022 9:42:38 AM - AUSSIE - Full Running
2/17/2022 9:42:43 AM - POODLE - Full Running
1/27/2022 1:31:06 PM - AUSSIE - Full Success
1/27/2022 1:31:03 PM - ACME - Full Success
1/27/2022 1:31:09 PM - POODLE - Full Success
1/27/2022 4:02:11 PM - POODLE - Standard Success

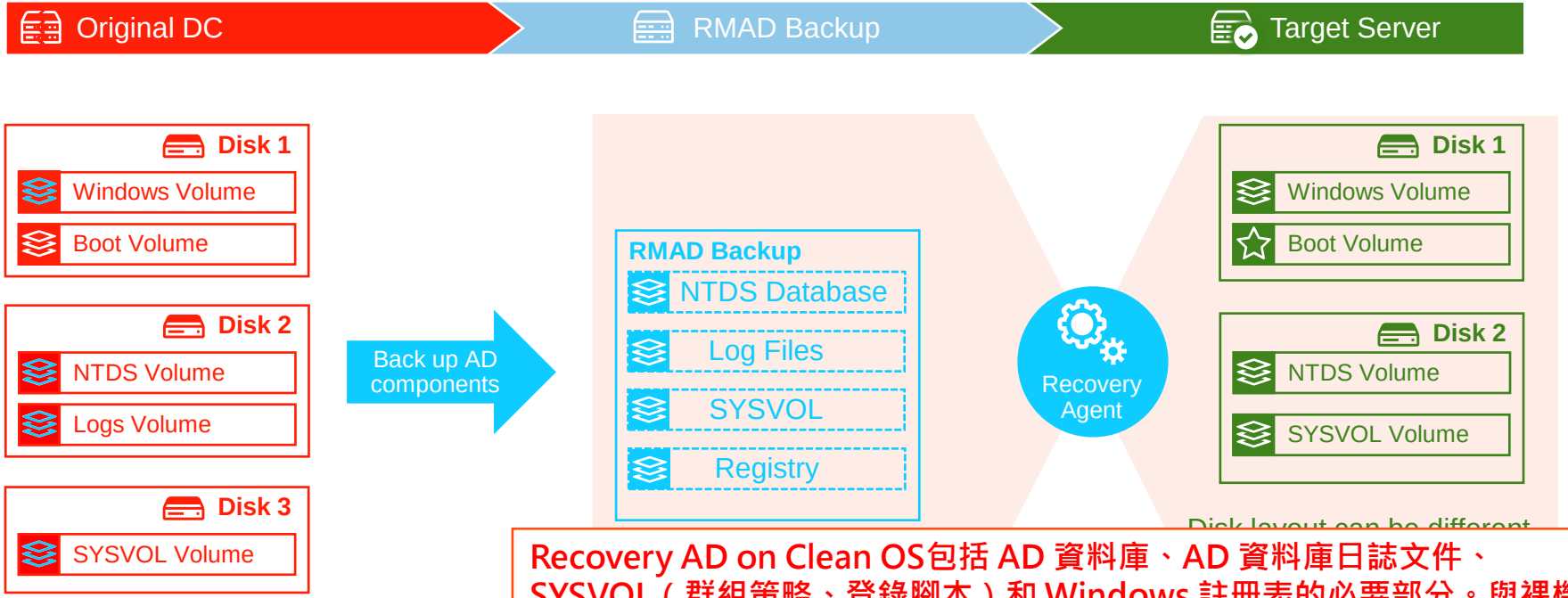
線上物件還原


Quest Recovery Manager for Active Directory
File Action View Window Help
Recovery Manager for Active Directory
Backup Agent Management
Computer Collections
Active Directory
Sessions
Backups
Back Up System State
Restore AD Objects Online
Restore AD LDS (ADAM) Objects Online
Restore Group Policy Online
Restore System State Offline
Ask the Experts
On Demand Recovery for Azure AD
Online Restore Wizard
Backup Selection
Depending on the wizard operation mode, the backup you select will be restored/compared to Active Directory or compared with another backup.
Registered backups:
Backup Age
Created
DC
Media
0 hour(s) 2020/1/16 上午 12:04:49 QAD.questzot.com C:\Users\Administrator\Docum
21 hour(s) 2020/1/15 上午 02:53:44 QAD.questzot.com C:\Users\Administrator\Docum
21 hour(s) 2020/1/15 上午 02:48:29 QAD.questzot.com C:\Users\Administrator\Docum
To register a new backup file or Active Directory database, click Register.
Register
< 上一步(B)
下一步(N) >
取消
說明
Detailed Report
Provides detailed information about the compare and restore operations performed on Active Directory or AD LDS (ADAM) objects with Recovery Manager.
Operation: Compare two backups
Finished on: 1/16/2020 12:20:23 AM
Source backup: C:\Users\Administrator\Documents\RMAD.bkf (1/15/2020 2:48:29 AM)
Target backup: C:\Users\Administrator\Documents.bkf (1/16/2020 12:04:49 AM)
Backed up computer: QAD.questzot.com
Number of processed objects: 267
Operation status: Completed successfully
This report provides information about: Added, deleted, and modified objects.
Added, deleted, and modified attributes.
Number of objects by type of change
Type of change
Number of objects
Modified
3
Expand all | Collapse all
Object DN
Object class
Type of change
Modified by
CN=Administrator,CN=Users,DC=questzot,DC=com
User
Modified
CN=RID Set,CN=QAD,OU=Domain Controllers,DC=questzot,DC=com
RID-Set
Modified
CN=Users,DC=questzot,DC=com
Container
Modified
Child objects by type of change
Child object DN
Type of change
Child object class
Modified by
CN=test,CN=Users,DC=questzot,DC=com
Added
User
Page: 1
Date: 1/16/2020

自動化AD網域/樹系重建



從乾淨的作業系統減少了惡意軟體的藏身之處



Recovery AD on Clean OS包括 AD 資料庫、AD 資料庫日誌文件、SYSVOL（群組策略、登錄腳本）和 Windows 註冊表的必要部分。與裸機恢復備份或系統狀態備份不同，RMAD不會備份磁區（可能會受到 root-kit 病毒的攻擊）或整個 Windows 目錄（包括 Windows/temp 和 Windows/winSxS，Kaseya 供應鏈/勒索軟體攻擊利用）

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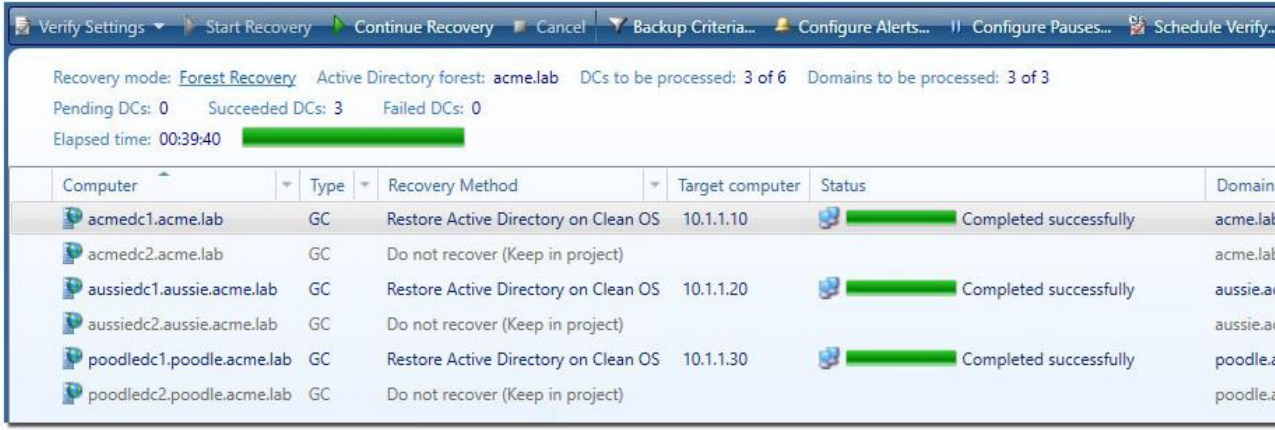
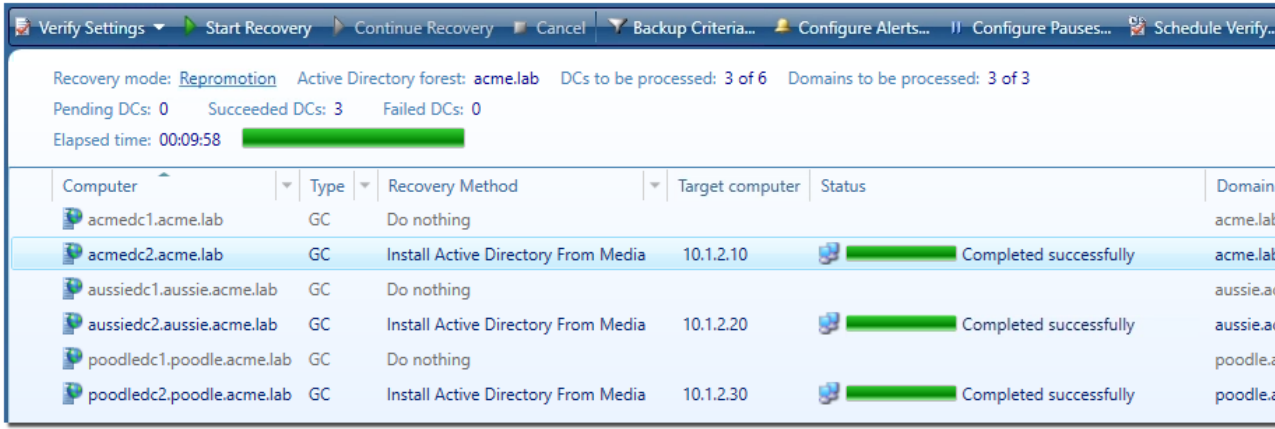
Clean OS
+
IFM
兩階段還原





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通往雲端！
混和AD環境該如何恢復呢？

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混合雲使風險更加複雜

企業對Azure AD的依賴正在增加

有更多雲端物件需要保護 – O365 groups, B2B/B2C users

本地AD將影響Azure AD

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MAERSK遭受NotPetya攻擊

無法檢索裝運清單

無法將貨物與貨船匹配

貨物滯留在港口

卡車停滯在
伊麗莎白海港碼頭

貨船在海上等待靠岸

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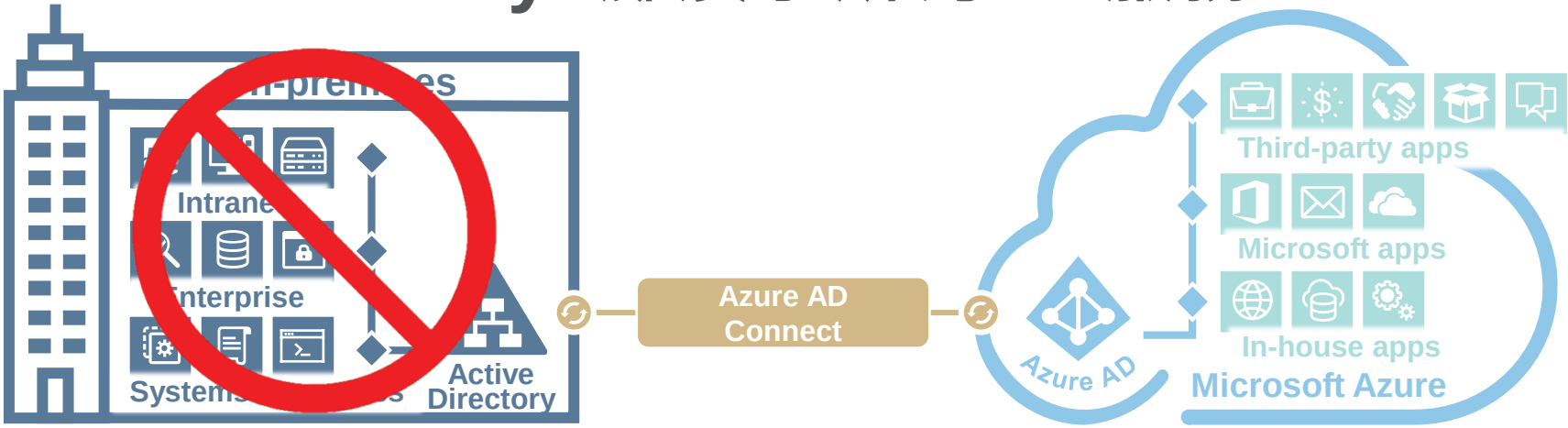
NotPetya癱瘓了所有AD服務



透過釣魚連接進入AD，然後感染至全球各地的AD

- 一台普通用戶電腦因點擊**釣魚郵件**而中招，病毒感染該電腦後，獲取到本機維運過的管理員密碼。
- 接下來使用該權限傳播到一台IT人員的電腦，然後在該IT人員的記憶體中**獲取到了AD網域管理權限**。
- 然後開始**感染**其他**有權限登入的工作站、應用程式伺服器，資料庫...等**，最後直到整個公司的網路環境崩壞。

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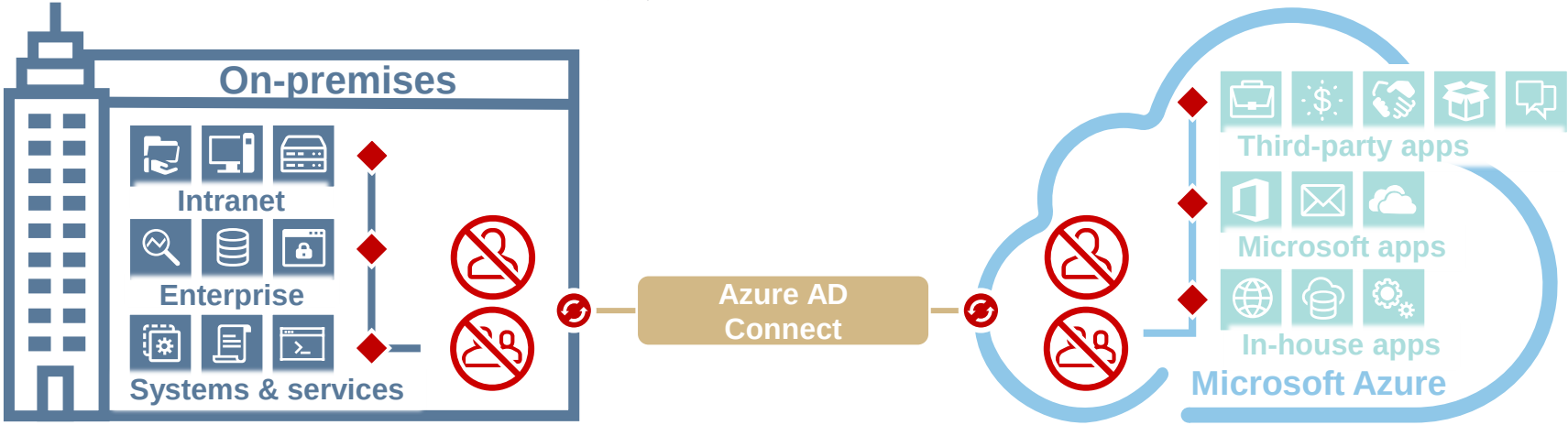
本地AD的損壞只是故事的一半



Azure AD Connect將執行其工作並刪除Azure AD中對應的物件

- 所有特定於**雲端的帳戶屬性全部丟失**。包括許可證分配、應用程式和資料存取的權限。
- 默認的情況下，**每30分鐘將同步一次**。在回滾變更之前，很有可能就已經完成了。
- 從同步中刪除帳號將會**自動刪除匹配的Azure AD用戶**。如果您不小心更改OU，則可能發生類似情況。

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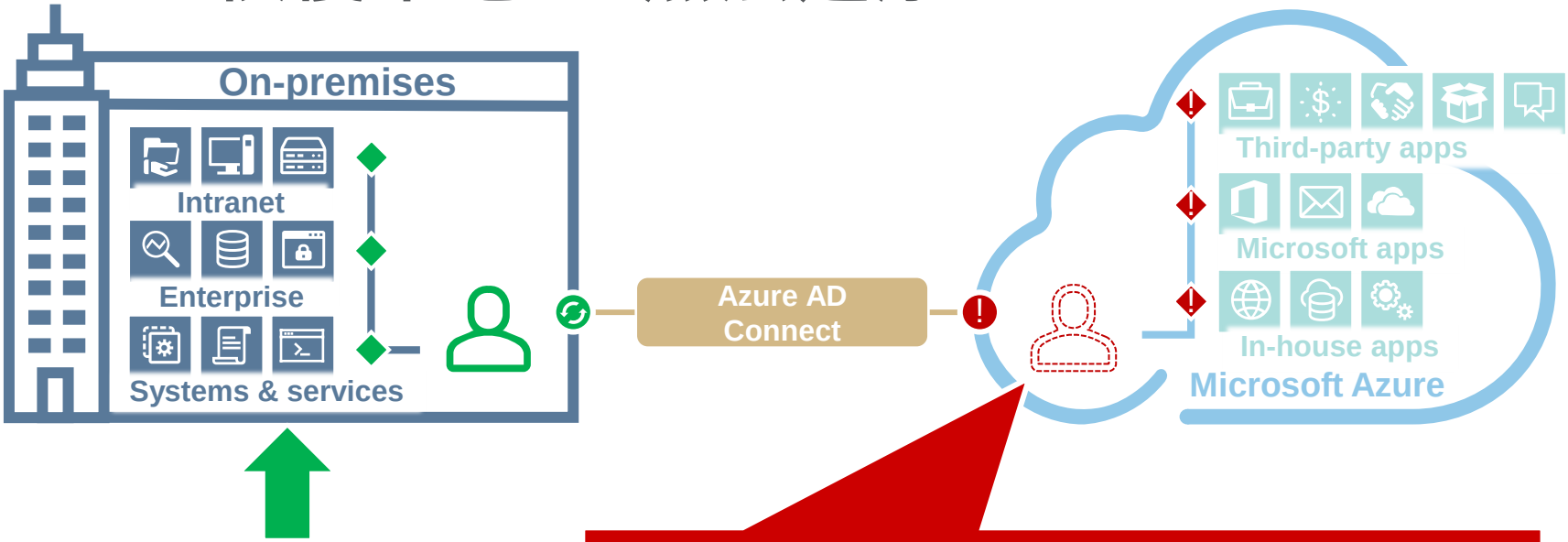
恢復本地AD無法還原Azure AD



- Azure AD連接同步建立全新用戶
- 雲端相關資訊將被重置：在本地 AD上不儲存這些資訊
- 應用程式和資料存取和的存取權限中斷

查看丟失的內容

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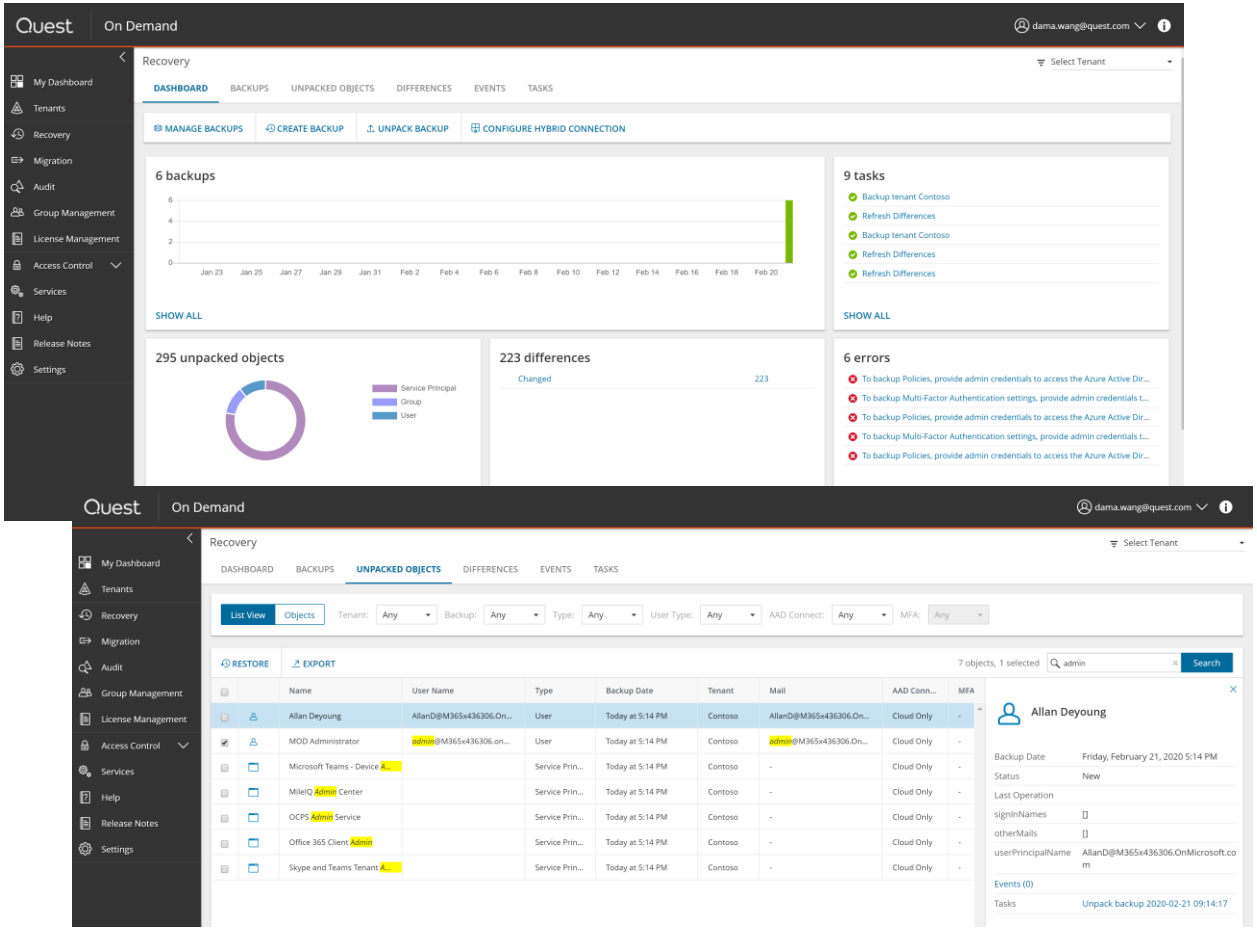
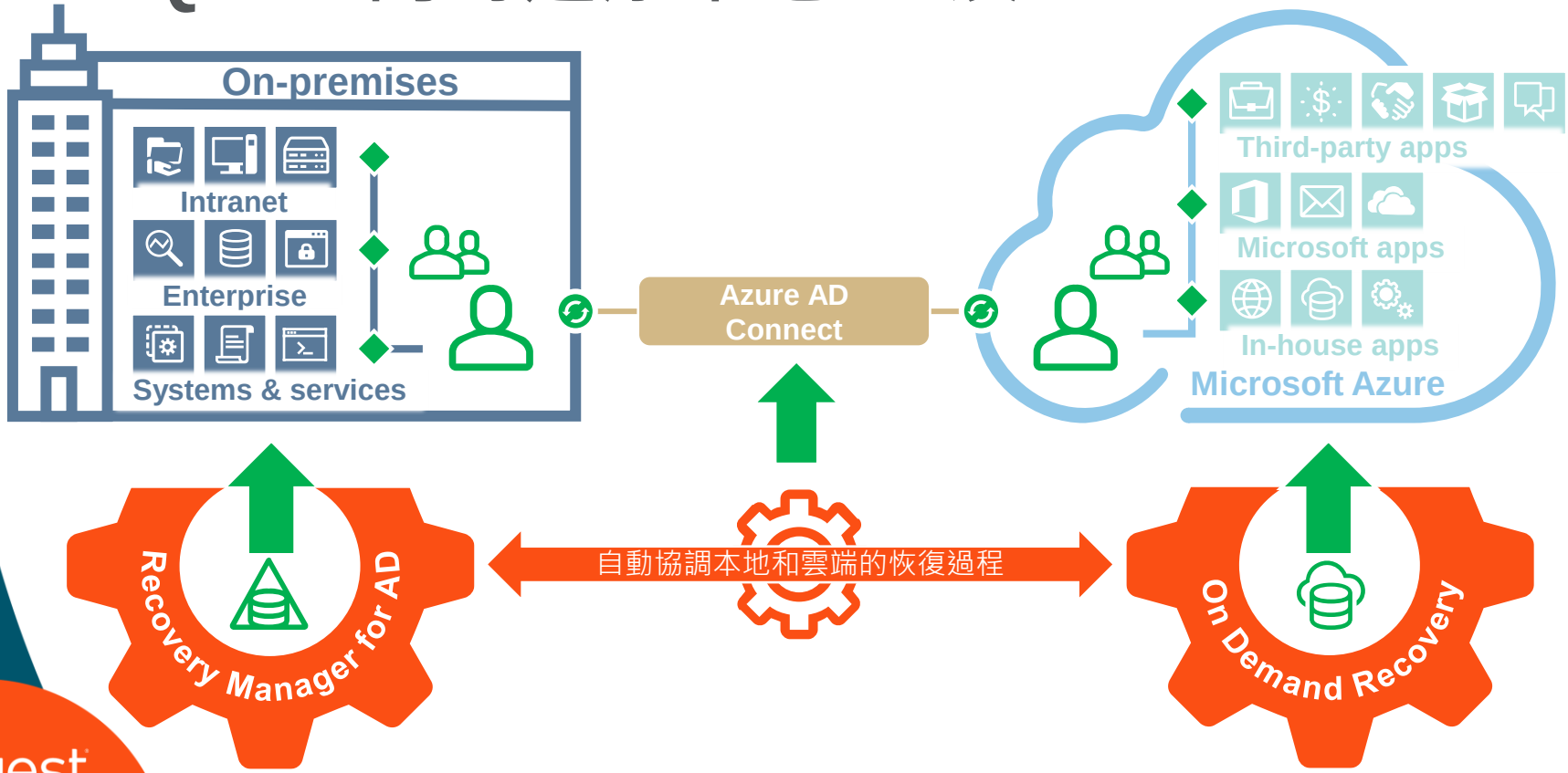
雲端備份還
還AAD物件



Quest同時還原本地AD及Azure AD



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Recovery Manager for AD + On Demand Recovery

混合AD環境完整備份和災難恢復解決方案

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Visit **www.Quest.com** to understand more about

- **Recovery Manager for AD Disaster Recovery Edition**
- **On Demand Recovery**

Thank You!

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