

DELL Technologies / Forum

# REAL TRANSFORMATION

GLOBAL SPONSORS





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# Dell EMC Data Protection Portfolio

Cloud-enabled, Software-defined, VMware  
Integrated

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Dell EMC

# Dell EMC Data Protection Portfolio



IDPA

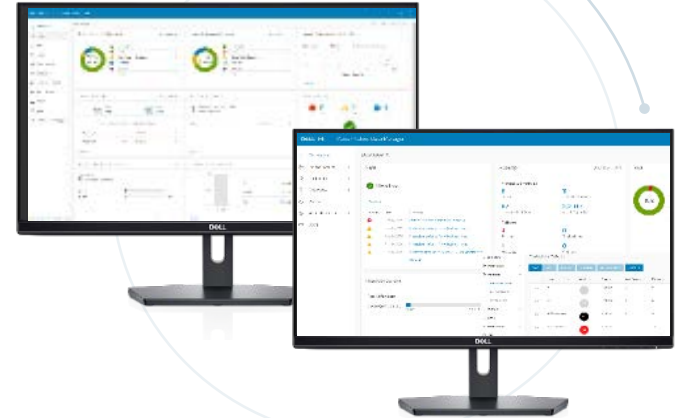


PowerProtect X400  
Appliance



PowerProtect DD

Data Protection Suite



PowerProtect Software



# Data Domain

**DELL**Technologies

# Dell EMC PowerProtect DD Series Appliances

The next generation of Data Domain



Fast  
Efficient  
Secure

Industry-leading  
multi-cloud  
protection

Expands  
multi-dimensional  
appliance portfolio



# What's new

## Simple & Modern

3 new appliances  
From 7 to 3 configurations  
Enhanced Management

## Faster Performance

Up to 38% faster backups  
Up to 67% faster restores  
Up to 50% higher IOPS



DD6900  
48 - 288TB



DD9400  
192 - 768TB



DD9900  
576 - 1.25PB

## More Efficiency

Up to 30% more logical capacity  
Up to 39% lower rack space  
50% lower floor space  
35% lower power & cooling

## Cloud Enabled

Cloud Tier and Cloud DR capable

# Data Domain Virtual Edition

Software defined protection storage



Multi-hypervisor



vmware



- Download and deploy in minutes
- Flexible capacity scales up to 96 TB
- Leverage existing infrastructure
- Includes
  - › DD Boost, DD Replicator, DD Encryption
- Cloud Tier supported on prem



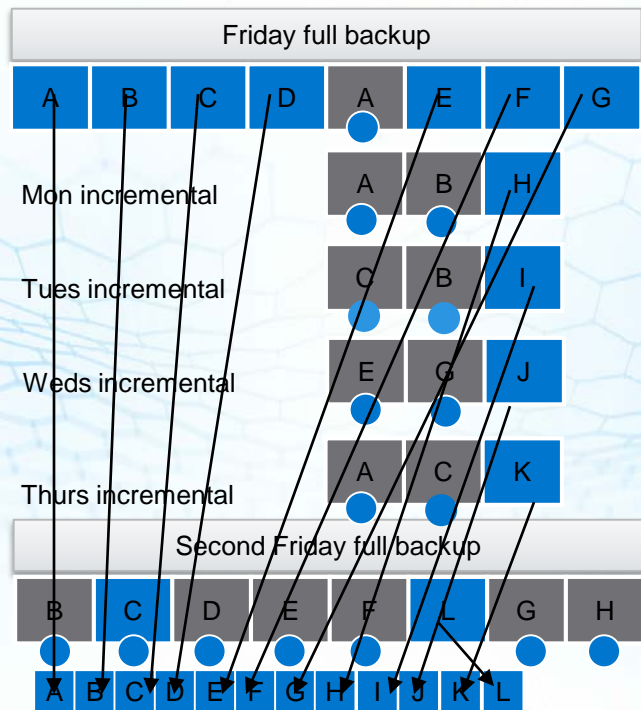


# Fast, Efficient, Secure



# Not all dedupe is created equal

Superior efficiency with variable-length deduplication

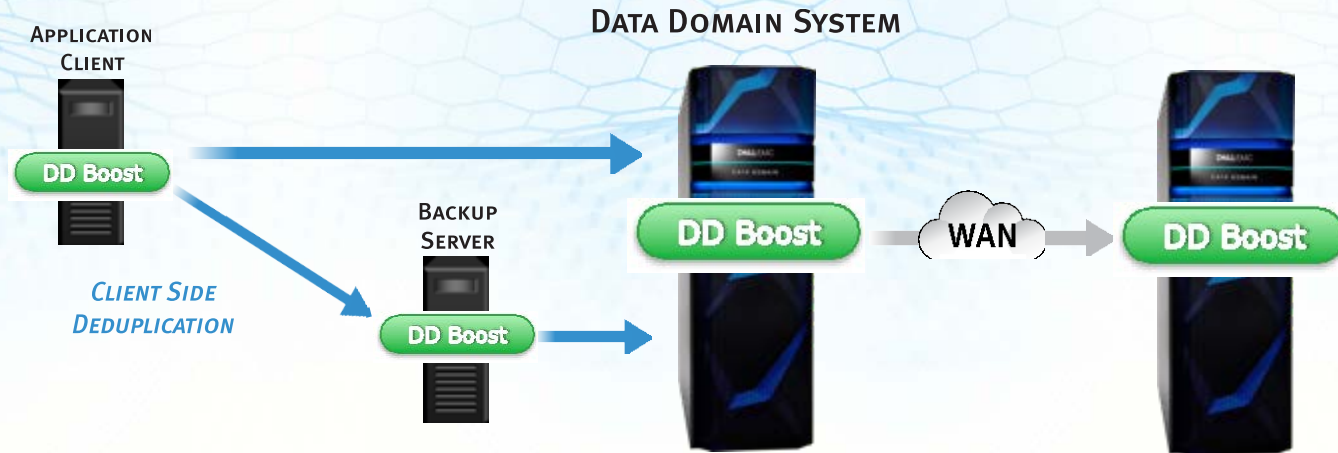


Backup data	Logical	Estimated reduction	Physical
Friday full	1 TB	2–4x	250 GB
Monday incremental	50 GB	7–10x	5 GB
Tuesday incremental	50 GB	7–10x	5 GB
Wednesday incremental	50 GB	7–10x	5 GB
Thursday incremental	50 GB	7–10x	5 GB
Second Friday full	1 TB	50–60x	18 GB
<b>Total</b>	<b>2.2 TB</b>	<b>7.6x</b>	<b>288 GB</b>

# Faster, more efficient backup

## Data Domain Boost

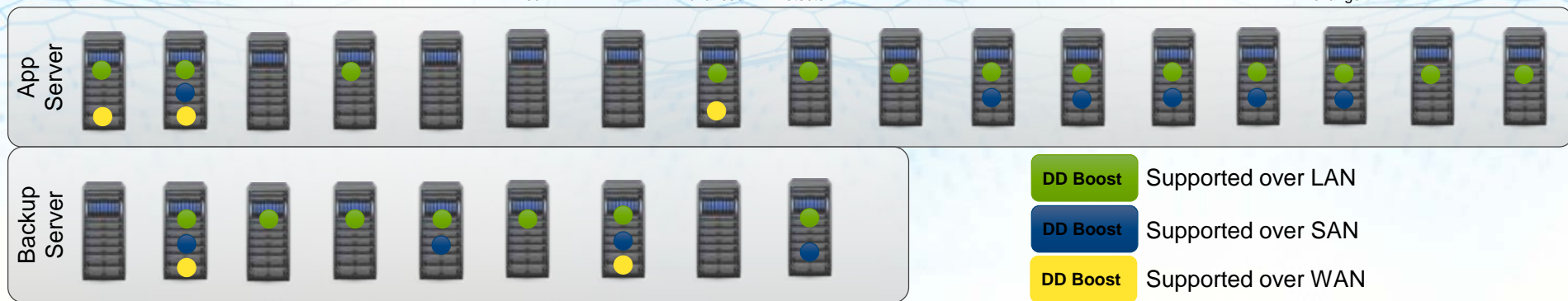
- Advanced native integration with leading backup and enterprise applications
- Speeds backups by up to 50%
- Efficient backup and replication, controlled by the app team
- Reduce network utilization by up to 98%



# DD Boost – Advanced integration for faster backup

DD Boost delivers advanced with backup applications and database utilities

- Enables client-side deduplication, sending only unique data to the Data Domain system
- Speeds backups by **50%**; reduces network impact by **98%**
- Integrated with a variety of popular Enterprise Applications:





# Most reliable protection storage

Data Domain Data Invulnerability Architecture

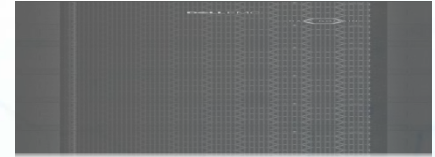


# High availability

ACTIVE Controller



STANDBY Controller



- High availability of backup, archive, and recovery data on Data Domain ensures operational continuity to minimize downtime for users and processes.
- HA configurations are supported on DD9800, DD9300 and DD6800, as well as the legacy DD9500
  - Delivering business continuity for both large and mid-size enterprises

# Fast



## Improve SLOs

Up to 38% faster backups  
with up to 94TB/hr

Up to 36% faster restores

## Higher IOPS

Up to 50% faster Instant  
Access/Instant Restore with  
up to 60,000 IOPS and up  
to 64 VMs

## Faster networking

New 25GbE and 100GbE  
networking support

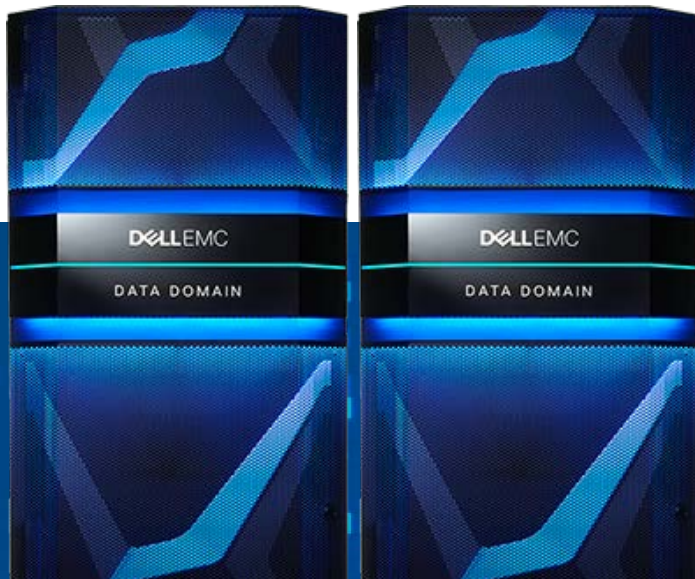




# Efficient

25% more capacity in a single rack

## 1PB



**DD9800**

## 1.25PB



**DD9900**

# Efficient

Up to 62.5% more logical capacity per rack

## Hardware Assisted Compression

Improves logical capacity by up to 30% driving up to 65x data reduction

## Grow-in-place capacity

Half shelf licensing support

## Denser Drives

Up to 39% lower rack space  
with new 8TB drives

# 81.3PB



## DD9900

# Flash enabled VM instant access and restore

Access VMs directly from PowerProtect DD using a protection copy

Improved Random IO with the inclusion of flash SSD for metadata

Enhanced data cache results in higher random IO performance for Instant Access / Instant Restore

- Instant Access/Instant Restore of up to 60,000 IOPS and instantly access up to 64 VMs\*

Instantly access up to

**64 VMs**



Instant restore up to

**60,000  
IOPS**

\* Disclaimer: Based on an 8KB 100% read internal test with DD Boost protocol on PowerProtect DD9900 and DD OS 7.0, August 2019. Actual results may vary.



# PowerProtect Cyber Recovery

The last line of data protection defense against cyber-attacks

## The Challenge

93%

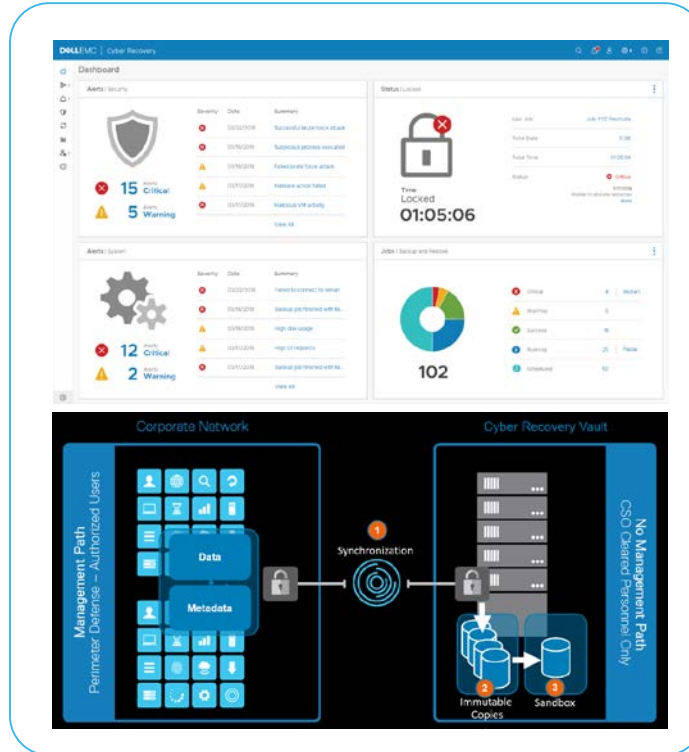
CAGR in Ransomware  
variants from 2010 to  
2016

92%

Organizations cannot detect  
cyber-attacks quickly

59%

Believe that isolating  
affected systems and  
recovering from backups  
should be the response to  
ransomware



- True Data Isolation Vault
- End-to-End Automated Workflow
- Modern & Simple UI/UX
- Flexible Rest API
- Fully Supported
- Enables Integrated Vault Analytics Workflows\*

## Consulting Services Available!!!

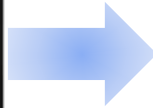
- Seamless ProDeploy Packages
- L1 CyberAdvisory Services

\* **INDEX  
ENGINES**  
Power Over Information

# UI Modernization

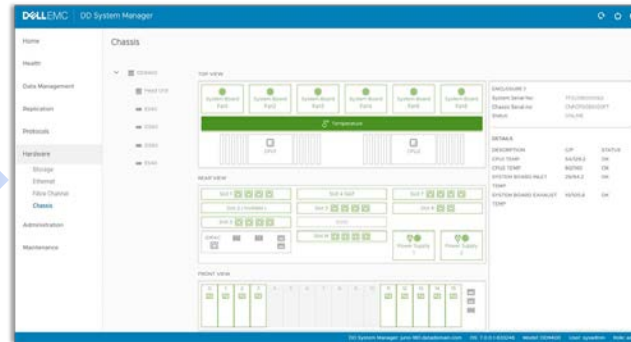
## PowerProtect DD Management Center

Manage in-cloud and on-prem  
PowerProtect DD Series



## DD System Manager

GUI for an individual chassis



- Simple navigation and access to detailed views
- Chassis view for better fault detection
- Automatic minimum storage provisioning of File System

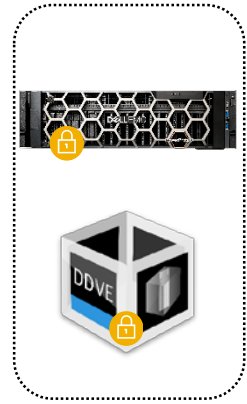


- Manage capacity, monitor health and resource and generate reports
- Supports AWS, Azure and Google Cloud Platform

# Industry Leading Multi-Cloud Protection



# Data protection in the cloud



Replicate from  
physical  
PowerProtect DD  
or DDVE

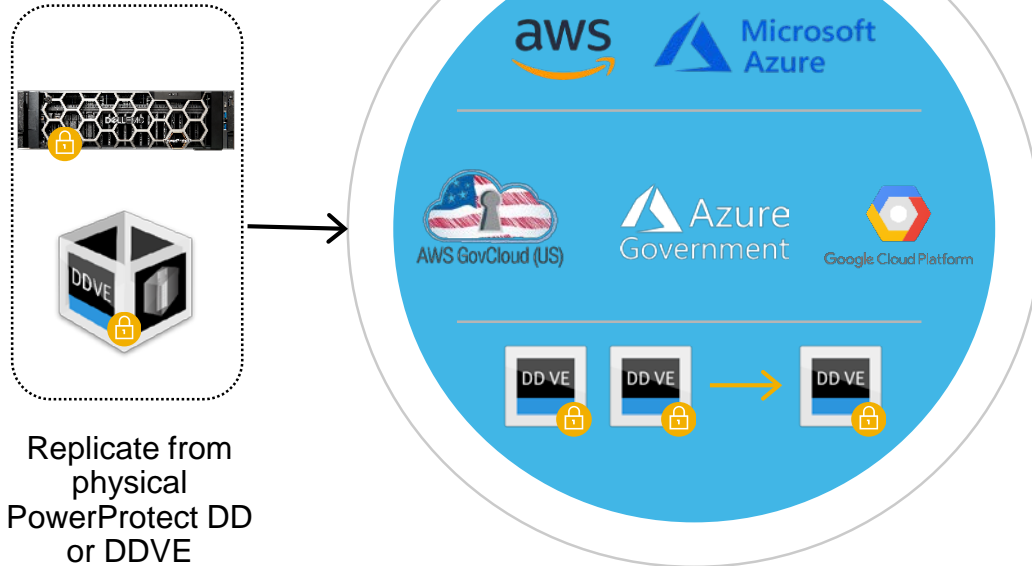


- ↑ Operational efficiency
- ↑ Resiliency
- ↑ Scale as you grow
- ↓ Reduced costs with LTR
- ↑ Faster DR

# Software-defined PowerProtect DD Virtual Edition

Protect your applications wherever they live

96TB  
per instance with  
object storage



Backup directly to cloud in a  
hybrid environment

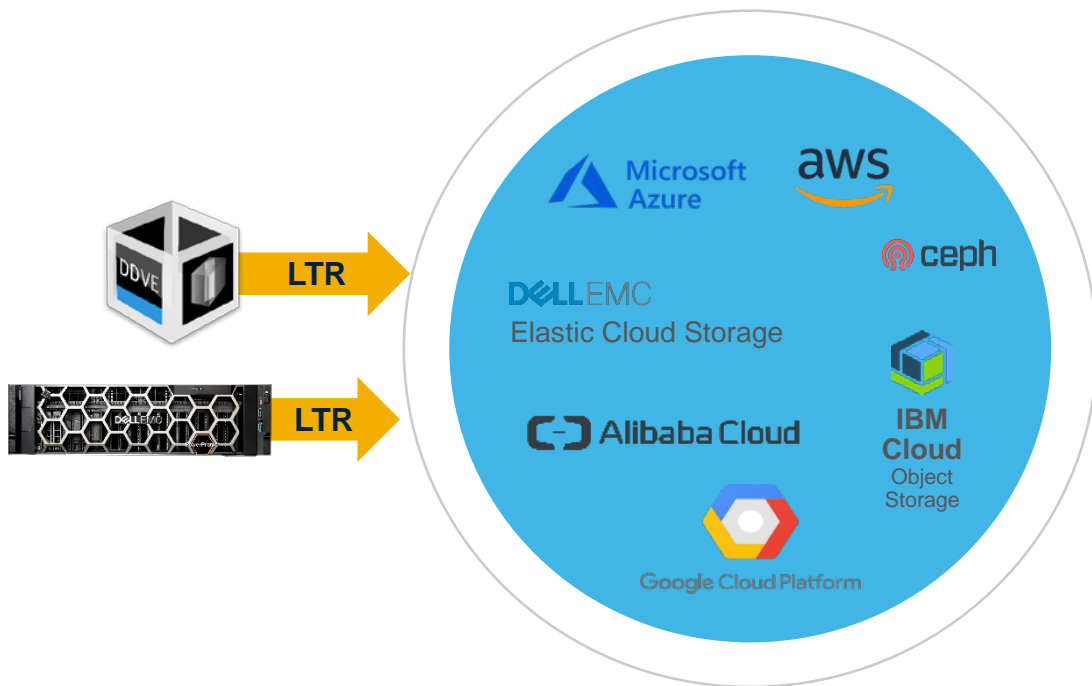
Replicate on-premises to a cloud

Multi-cloud ecosystem

- AWS S3
- Azure Hot Blob
- AWS GovCloud
- Azure Government Cloud
- Google Cloud Platform

# Cloud Tier for long-term retention

Unparalleled efficiency for tiering protection storage to the cloud



## Simple

Automated, native tiering to public, private or hybrid cloud

## Cost-effective

Send and retrieve only unique data and reduce transactional overhead to lower TCO

## Open

Broad ecosystem and flexible deployment options



# Dell EMC Cloud Disaster Recovery



## Orchestrated DR

- End-to-end orchestration
- DR plans
- Rapid recovery

## Efficient Architecture

- Extend on-premises data protection
- Minimal cloud cost & footprint
- Eliminate DR data center costs

## Simple operation

- Use familiar on-prem UI
- Direct in-cloud access
- 3 clicks failover, 2 clicks failback

# Integrated Data Protection Appliance

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# Data Protection for Small and Mid-size Organizations

## CHALLENGES



Increase in data volumes, users, apps



Cloud extensibility



Do more with less

## REQUIREMENTS



Simplicity for quick time-to-value



Efficient cloud enablement



Low cost-to-protect



High performance

INTRODUCING

# Integrated Data Protection Appliance **DP4400. Simply Powerful.**



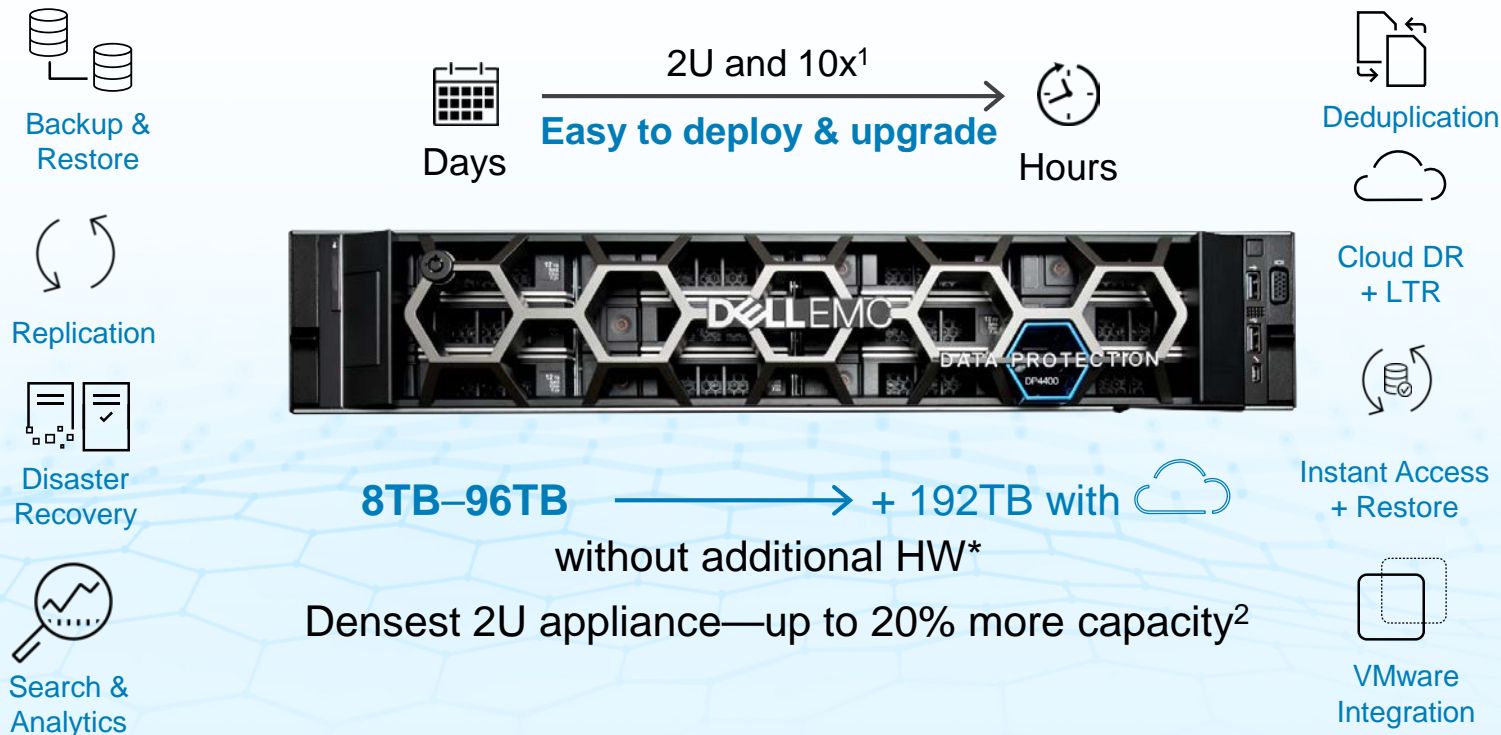
@ Lowest cost-to-protect.<sup>1</sup>  
Guaranteed.

<sup>1</sup>Dell EMC internal analysis using publically available competitive pricing, May 2018. Lowest cost-to-protect is based on \$ per logical GB. Actual cost will vary.



DELL EMC DATA PROTECTION

# Simplicity in a Converged Solution



DELL EMC DATA PROTECTION

# Simplicity is Easy Management

## Modern UI



PLAY VIDEO



Dashboards



Exception resolutions



Policy management



Reporting



## DELL EMC DATA PROTECTION

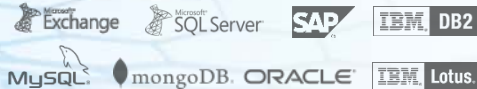
# Power is protection everywhere

Largest application ecosystem<sup>1</sup>

Any application, multi-hypervisor and cloud

Integration with VMware, SQL, Oracle native management tools

Physical



Home grown &  
custom apps



vmware



Hyper-V

Virtual



IBM Cloud  
Object Storage

Cloud



virtustream

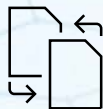


# Power is Performance & Efficiency

Powered by

14G PowerEdge  
Server

Source-side  
deduplication



NVMe flash for  
instant access  
& restore



Boosted  
application-direct  
protection



Up to

2X

faster backups<sup>1</sup>

Up to

98%

less bandwidth required<sup>1</sup>

7X

more backup streams<sup>1</sup>

55:1

Avg dedupe<sup>2</sup>

<sup>1</sup>ESG Lab Review commissioned by Dell EMC, February 2018, versus a competitive Vendor A. [Additional information](#) on the testing environment.

<sup>2</sup>Based on Dell EMC internal analysis of customer data as of May 2018.



DELL EMC DATA PROTECTION

# Power is Cloud



Automated and efficient data movement  
Eliminates the need for cloud gateway  
API extensible for simplified management  
Free estimator tool for capacity management

UP TO **2X usable capacity** in the cloud  
with Cloud Tier



PLAY VIDEO

DELL EMC DATA PROTECTION

# Power is Cloud Disaster Recovery

Efficient with End-to-End Orchestration

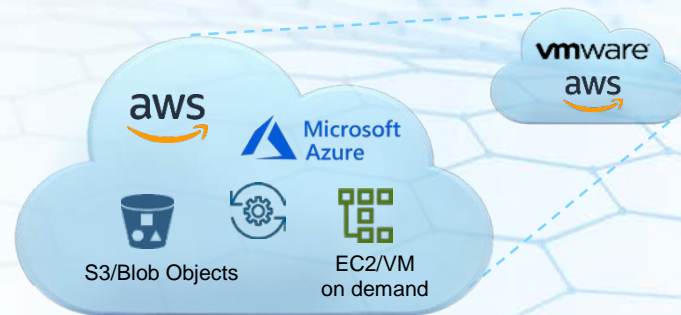


## Integrated Cloud DR

3 clicks **to failover**



AWS or Azure as DR Site



## Protect in AWS or Azure

2 clicks **to failback**

DELL EMC DATA PROTECTION

# @ Lowest Cost-to-Protect

Protect up to

**4x**

**MORE DATA  
IN A 2U<sup>1</sup>**

**55:1**

**AVG  
DEDUPE<sup>2</sup>**

Up to

**98%**

**LESS  
BANDWIDTH  
REQUIRED<sup>1</sup>**

Costs up to

**80%**

**LESS TO  
PROTECT<sup>3</sup>**

<sup>1</sup>ESG Lab Review commissioned by Dell EMC, February 2018, versus a competitive vendor A. [Additional information](#) on the testing environment.

<sup>2</sup>Based on Dell EMC internal analysis of customer data as of May 2018.

<sup>3</sup>Dell EMC internal analysis using publicly available competitive pricing from Rubrik and Cohesity, May 2018. Based on \$ per logical GB. Actual cost will vary.

# Guaranteed.

## **FUTURE-PROOF** LOYALTY PROGRAM



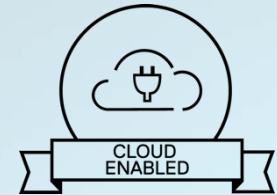
**3-YEAR SATISFACTION  
GUARANTEE**



**UP TO 55:1 DATA PROTECTION  
DEDUPLICATION GUARANTEE**



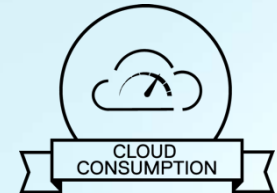
**INVESTMENT  
PROTECTION**



**CLOUD MOBILITY, PROTECTION,  
DATA SERVICES & MANAGEMENT**



**PREDICTABLE  
SUPPORT PRICING**



**CLOUD-ENABLED  
INFRASTRUCTURE**



DELL EMC DATA PROTECTION

# Comprehensive IDPA Portfolio

SMALL,  
MIDSIZE  
& ROBO

MIDSIZE  
ENTERPRISE

LARGE ENTERPRISE

DP4400

DP5800

DP8300

DP8800

BACKUP  
INGEST

Up to 9 TB/hr

Up to 32 TB/hr

Up to 41 TB/hr

Up to 68 TB/hr

LOGICAL CAPACITY<sup>3</sup>

80 TB to 4.8 PB<sup>1</sup>  
240 TB to 14.4 PB<sup>2</sup>

960 TB to 14.4 PB<sup>1</sup>  
2.8 to 43.2 PB<sup>2</sup>

1.9 to 36 PB<sup>1</sup>  
5.7 to 108 PB<sup>2</sup>

6.2 to 50 PB<sup>1</sup>  
18.6 to 150 PB<sup>2</sup>

USABLE CAPACITY

8 to 96 TBu<sup>1</sup>  
Up to 288 TBu<sup>2</sup>

96 to 288 TBu<sup>1</sup>  
Up to 864 TBu<sup>2</sup>

192 to 720 TBu<sup>1</sup>  
Up to 2.16 PBu<sup>2</sup>

624 TBu to 1 PBu<sup>1</sup>  
Up to 3 PBu<sup>2</sup>

# PowerProtect Software & PowerProtect Appliance

**DELL**Technologies

# Minimizing Data Protection Complexity



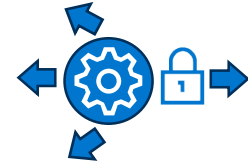
Simplify with  
Integrated



Get prepared with  
Scale out

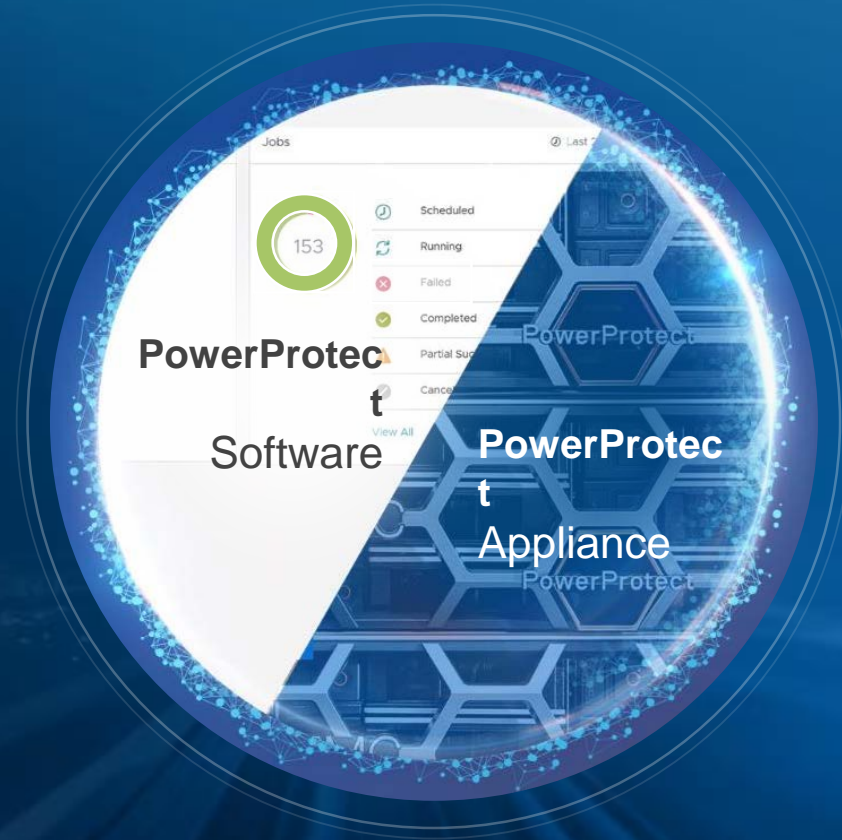


Empower data &  
application owners



Application level  
data protection with  
IT governance

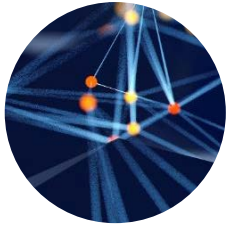
# Dell EMC PowerProtect Software & Appliance





# Dell EMC PowerProtect Software

Next generation Data Management software platform



**Software  
defined**



**Cloud  
optimized**



**Self  
service**



**SaaS-based  
monitoring**



**Modern services  
based architecture**

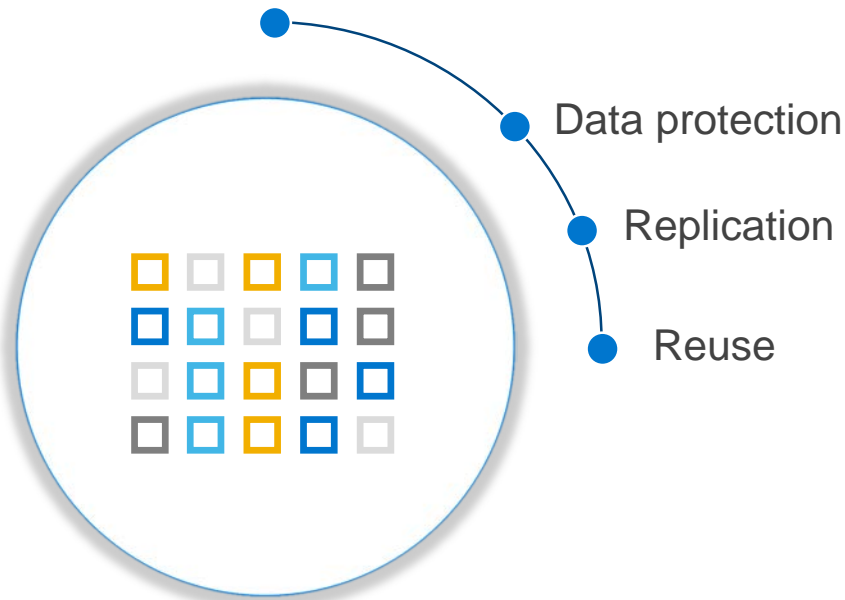


Protection, Replication and Reuse with built-in deduplication



# Software defined

- Flexible consumption options
- Built-in deduplication
- Optimized data placement enabled by machine learning

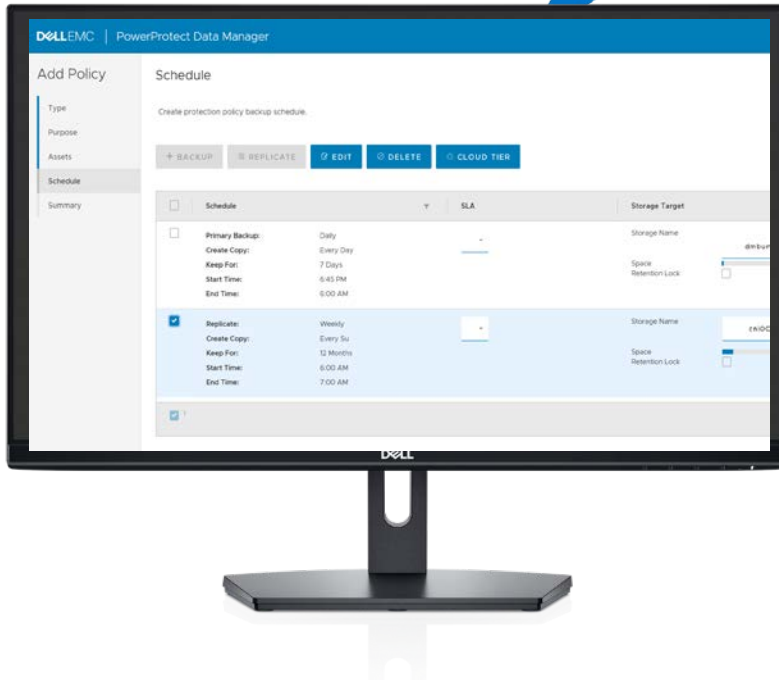


vmware®

ORACLE®

Microsoft®  
SQL Server®

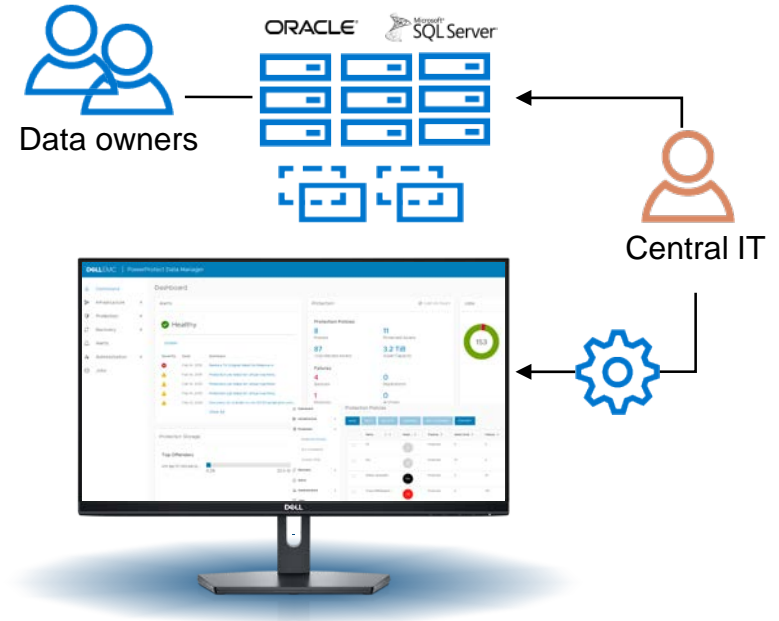
# Multi-cloud optimized



- Extend data to the cloud
  - Long-term retention and disaster recovery
- No additional gateway
  - Maximize investment and expanding capacity

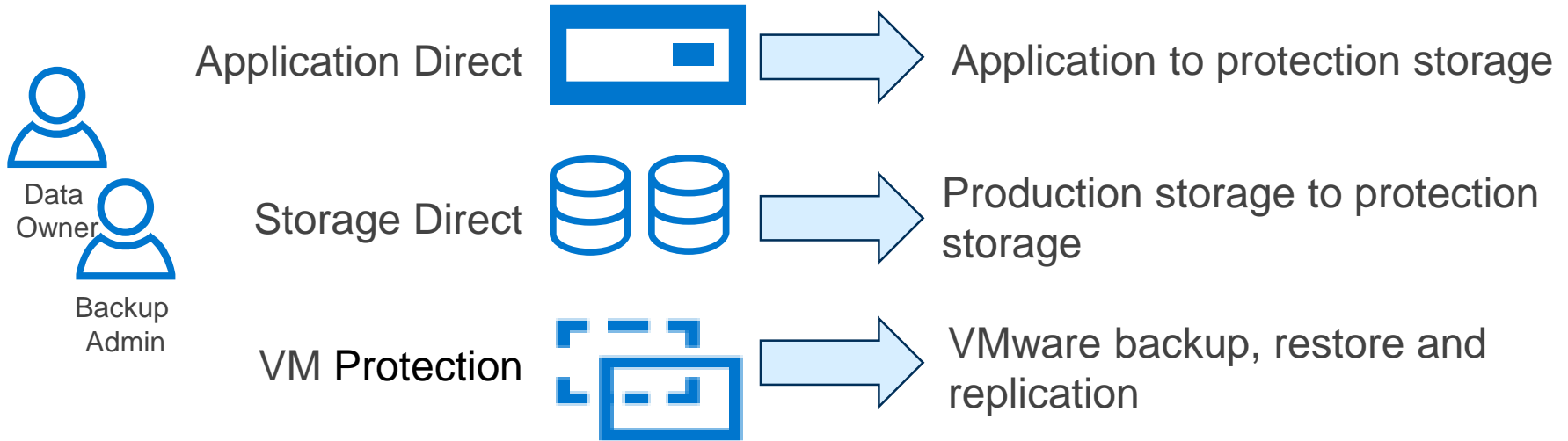
# Self-service and governance

- Empower both data owners and central IT teams
- Direct backup and recovery from native applications
- Automated discovery & provisioning
- IT operations oversight and governance control



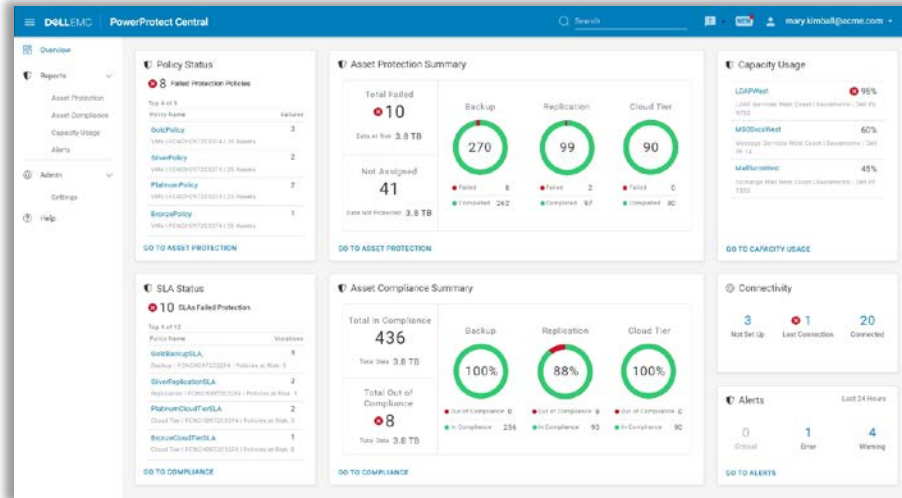
# Direct protection capabilities

## Governance, compliance and automation





# SaaS-based management



- Easy to analyze and troubleshoot
  - Monitoring
  - Reporting
- Get started in minutes with nothing to install

# Next Generation Data Management



## SIMPLICITY

- User Interface
- Workflows
- Centralization
- Protection Life Cycle

## AUTOMATION

- Storage configuration
- App agent configuration
- Compliance
- Storage Management

# PowerProtect X400 Appliance

Multi-dimensional Data Management appliance powered by Data Domain's deduplication

Powered by Intel® Xeon® Scalable Processors



Simple to Install,  
Use and  
Upgrade

Multi-Dimensional  
scale-up & Scale-  
out Flexibility

Hybrid or All  
Flash

Linear  
Performance  
and Capacity

Machine Learning  
Data Placement

# Simple to Install, Use, and Upgrade



Customer Site Prep



Software Factory  
Installed & Pre-deployed



UI Guided Customer  
Configuration & Policy Setup



Protect with confidence

***Box to Backup Simplicity***

# Next Generation, Multi-Dimensional Appliance

PowerProtect X400 integrates PowerProtect Software for midsized to enterprise customers

Powered by Intel® Xeon® Scalable Processors



**X400 Platform cube**

**X400F All Flash Capacity cube**

**All Flash**



**X400 Platform cube**

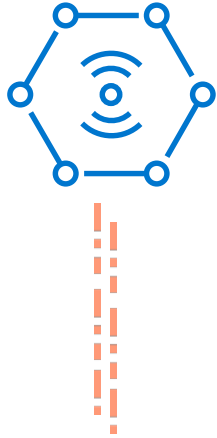
**X400H Hybrid Capacity cube**

**Hybrid**

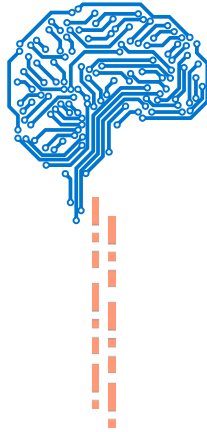


# Protect with Confidence

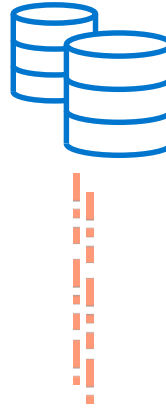
Isolated fault domains



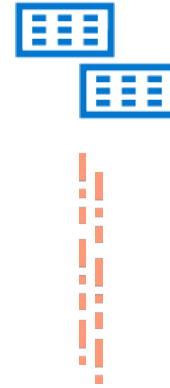
Redundant network design



Platform cube tolerated up to 2 simultaneous failures



Scale out cube survives up to 2 simultaneous failures



**Built for Resiliency**

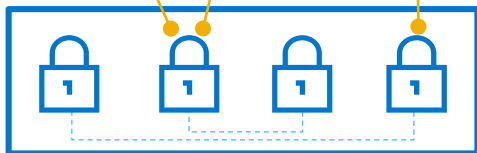
# Automated Protection

Automation of routine processes streamlines protection and helps defend against human error



## Onboard assets automatically

Discover and classify new VMware VMs, Oracle on Linux, and SQL workloads



## Hands-off protection

Automatically assign new databases to preconfigured protection plans



## Provision and configure end to end

Automated provisioning of protection storage as Oracle and SQL self-service backup destinations

# SaaS-based Reporting for Operational Intelligence



## Compliance & predictive analytics

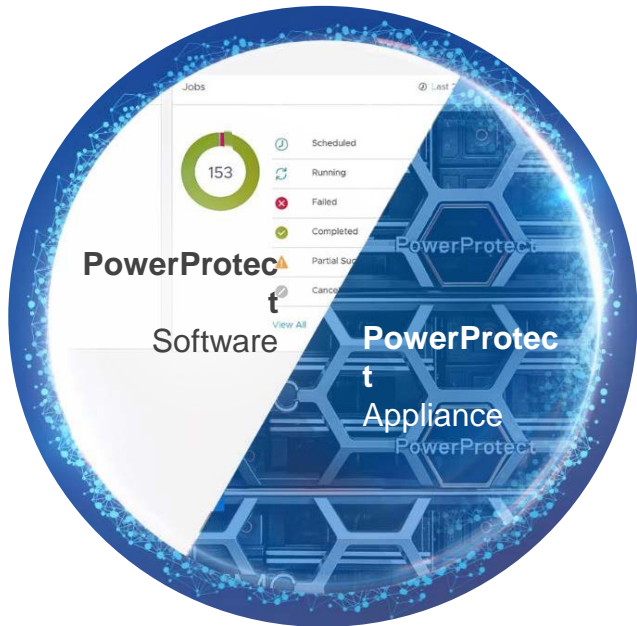
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Easily monitor and analyze your appliance

Most often used Reports where ever you need

# PowerProtect Software, delivered how you want it

PowerProtect Software | PowerProtect X400 Appliance | Part of the Data Protection Suite



- Data Management
- Backup and Recovery
- Disaster Recovery
- Continuous Replication
- Centralized Management
- Monitoring and Reporting
- Cyber Recovery

# DELL Technologies



DELL EMC

Pivotal

RSA

Secureworks

virtustream

vmware