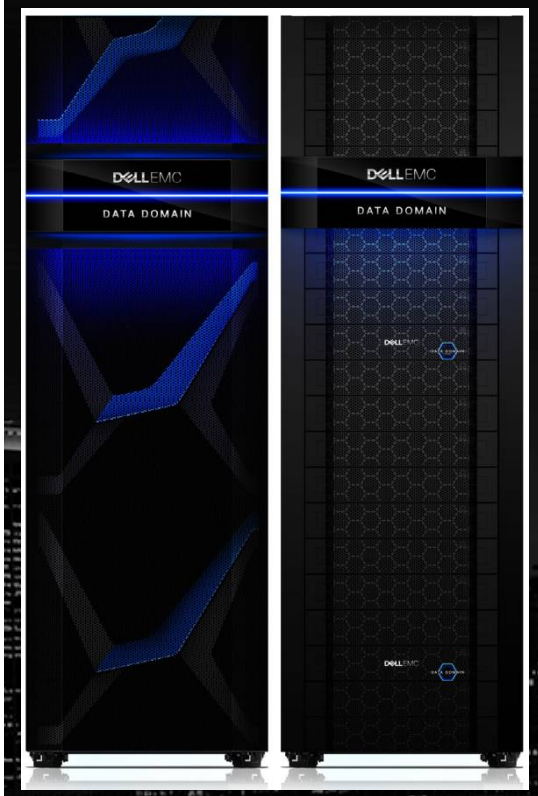
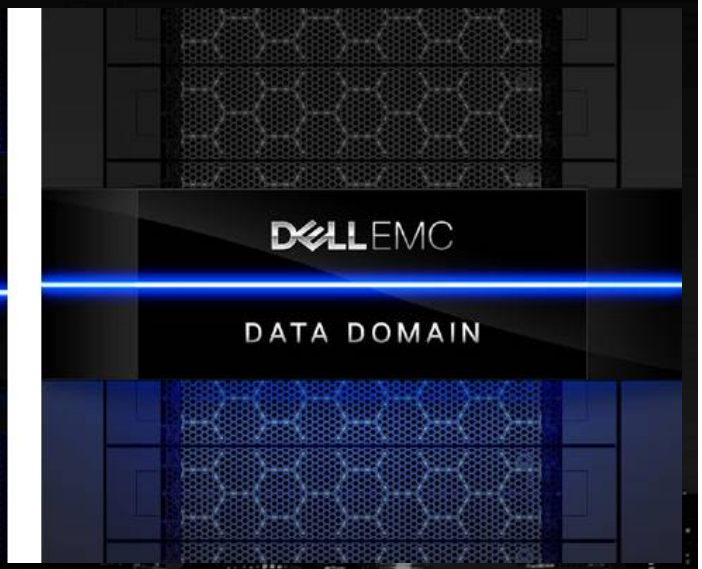
NEW DATA DOMAIN MODELS



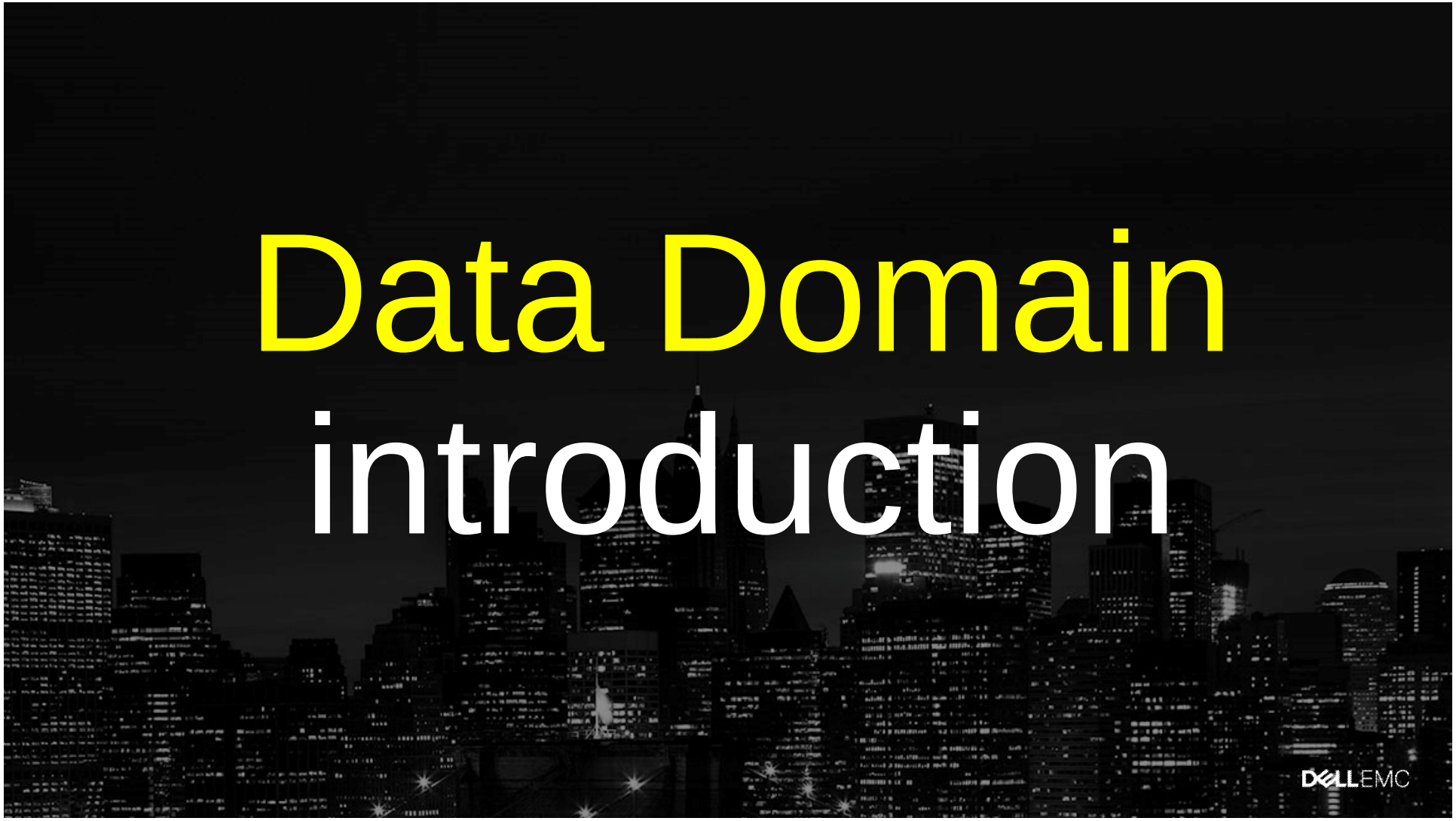


DELL EMC

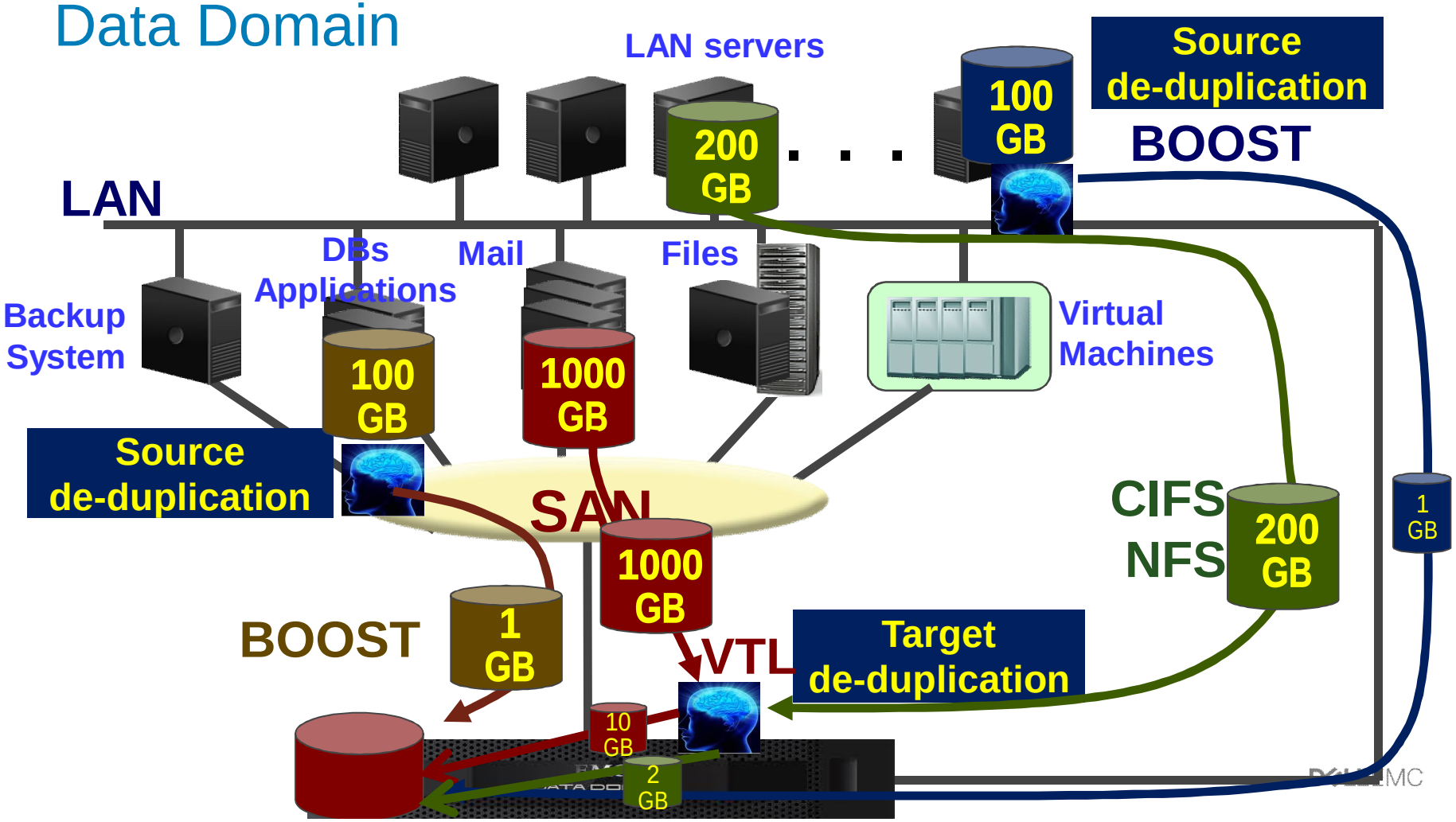
Daniel.Olkowski@dell.com

Agenda

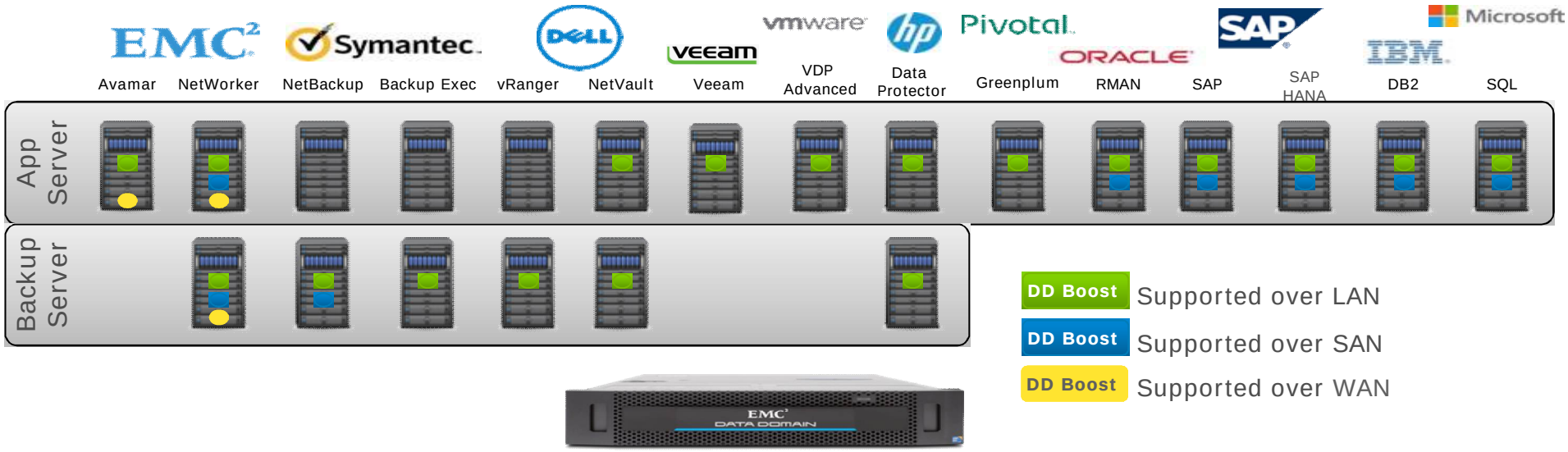
- Introduction
- New Data Domain models
- New functionalities in Data Domains
- Costs


Data Domain
introduction
DELL EMC

Data Domain


LAN servers
Source de-duplication
BOOST
100 GB
200 GB
LAN
DBs Applications
Mail
Files
Backup System
Virtual Machines
100 GB
1000 GB
Source de-duplication
SAN
CIFS
NFS
200 GB
1 GB
1000 GB
BOOST
1 GB
VTL
Target de-duplication
10 GB
2 GB

Data Domain Boost Ecosystem



Data Domain:
Why source de-duplication?

- Performance
  - Over 60TB/h continues backup speed in real environments
  - The same speed no matter if LAN or SAN
- No network bottleneck
- Source de-duplication for every backup software

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Data Domain:
Why source de-duplication?

- No network load
- Smaller costs
  - Fewer Media Servers
  - No need for dedicated network
  - Smaller amount of backup software licenses

Why Data Domain?

- Smaller costs
  - *Best market de-duplication means smaller storage required*
  - *Smaller cost of replication pipe (minimal data trasfered for Disaster Recovery)*

Why Data Domain?

- Elastic environment
  - *Backup via any network (LAN/SAN)*
  - *Any backup software (single console, beast of breed)*
    - *(VMware, HyperV, Teradata, Greenplum,…)*

Why Data Domain?

- **Performance**
  - *Source de-duplication*
  - *Highest number of streams*
  - *Unique Data Domain engine providing full performance during backup / restore / replication / garbage collection*
  - *Highest market performance*
    - *over 60TB/h continues backup in real environment (previous models)*

Why Data Domain?

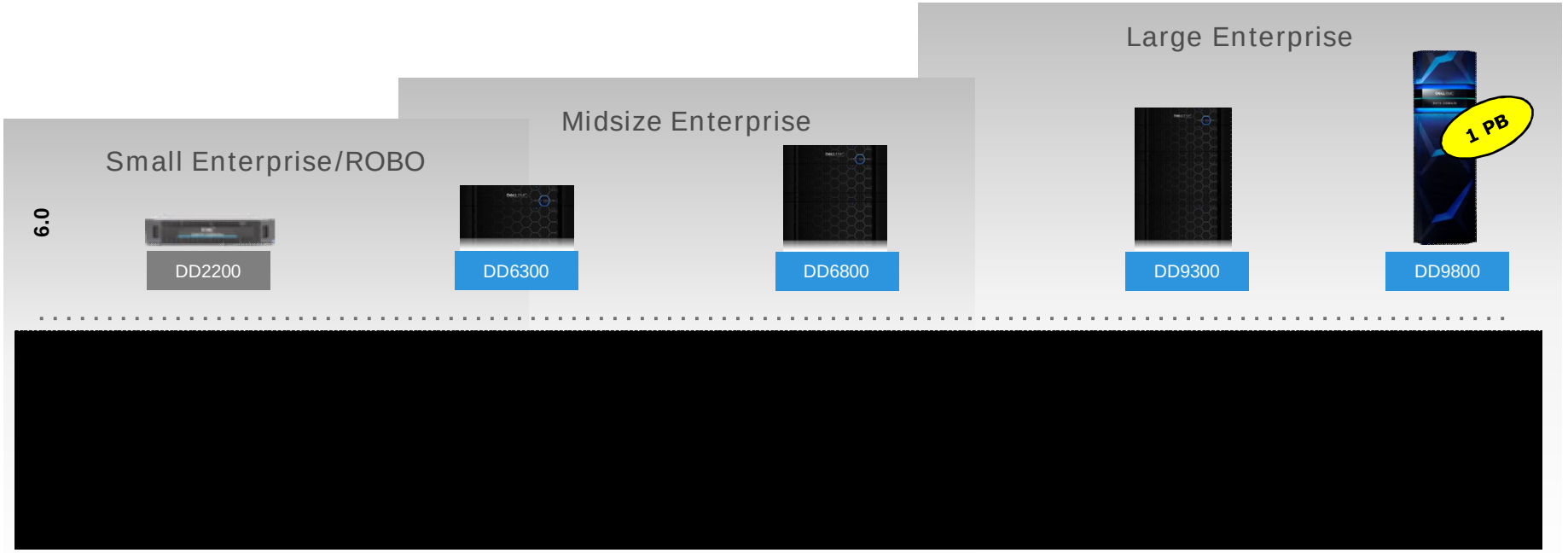
- Guarantee of data recovery
  - *Verification of all written data in fly*
  - *Power outage – immediate readiness to work after turn on*
  - *Isolated Recovery: Full protection against*
    - *Ransomware*
    - *Hacker*
    - *Accidental data removal*

Why Data Domain?

- Disaster Recovery
  - *Transfer 1% of data – restore of 100% in remote site*
  - *Any distance between location*
  - *Management from backup software*

New
Data Domain
models
DELL EMC

DD OS 6.0 Portfolio – Mapped to Current Systems



DD 6300
Replacement for
DD 2500
DELL EMC

Data Domain DD6300

For Small & Midsized Enterprises

1.8x
Faster

1.3x
More scalable

Compared with DD2500

- Backup 192 TB in 8 hours
  - 24 TB/hr with DD Boost
  - 8.5 TB/hr without DD Boost
- Up to 178 TB usable capacity
- Up to 8.9 PB logical capacity
- Up to 270 stream count
- All in one system

DD6300 CONNECTIVITY

BUILT-IN NETWORKING

1x Mgm't port
1x monitor port
4x 10Gbe

OPTIONAL NETWORKING W/ IO CARDS

Up to 4x quad-port 10GbE SLICs: Optical

Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive)

Up to 4 x dual ported 16Gbps FC

DD 6800
Replacement for
DD 4200 / DD 4500
DELL EMC

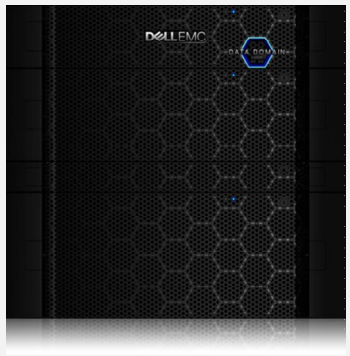
Data Domain DD6800

For Midsized Enterprises

1.3x
Faster

1.3x
More scalable

Compared with DD4200



- Backup 256 TB in 8 hours
  - 32 TB/hr with DD Boost
  - 14 TB/hr without DD Boost
- Up to 864 TB usable capacity[1]
- Up to 43.2 PB logical capacity[1]
- Up to 405 stream count
- Enterprise Ready w/ High Availability
- Cloud-enabled w/ DD Cloud Tier

[1] Total capacity with DD Cloud Tier

DD6800 CONNECTIVITY

BUILT-IN NETWORKING

1x Mgm't port
1x monitor port
4x 10Gbe

OPTIONAL NETWORKING W/ IO CARDS

Up to 4x quad-port 10GbE SLICs: Optical

Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive)

Up to 4 x dual ported 16Gbps FC

DD 9300
Replacement for
DD 7200
DELL EMC

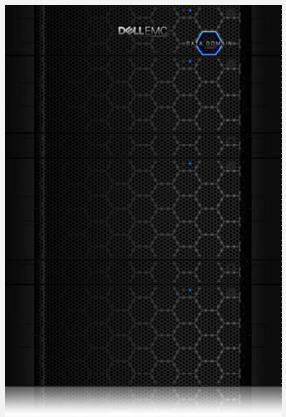
Data Domain DD9300

For Large Enterprises

1.4x
Faster

2.5x
More scalable

Compared with DD7200



- Backup 328 TB in 8 hours
  - 41 TB/hr with DD Boost
  - 20 TB/hr without DD Boost
- Up to 2.16 PB usable capacity[1]
- Up to 108 PB logical capacity[1]
- Up to 810 stream count
- Enterprise Ready w/ High Availability
- Cloud-enabled w/ DD Cloud Tier

[1] Total capacity with DD Cloud Tier

DD9300 CONNECTIVITY

BUILT-IN NETWORKING

1x Mgm't port
1x monitor port
4x 10Gbe

OPTIONAL NETWORKING W/ IO CARDS

Up to 4x quad-port 10GbE SLICs: Optical

Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive)

Up to 4 x dual ported 16Gbps FC

DD 9800
Replacement for
DD 9500
DELL EMC

Data Domain DD9800

For Large Enterprises

1.2x
Faster

1.8x
More scalable

Compared with DD9500

- Backup 544 TB in 8 hours
  - 68 TB/hr with DD Boost
  - 31 TB/hr without DD Boost
- Up to 3 PB usable capacity[1]
- Up to 150 PB logical capacity[1]
- Up to 1885 stream count
- Enterprise Ready w/ High Availability
- Cloud-enabled w/ DD Cloud Tier

[1] Total capacity with DD Cloud Tier

DD9800 CONNECTIVITY

BUILT-IN NETWORKING

1x Mgm't port

4x 1Gbe

OPTIONAL NETWORKING W/ IO CARDS

Up to 4x quad-port 10GbE SLICs: Optical

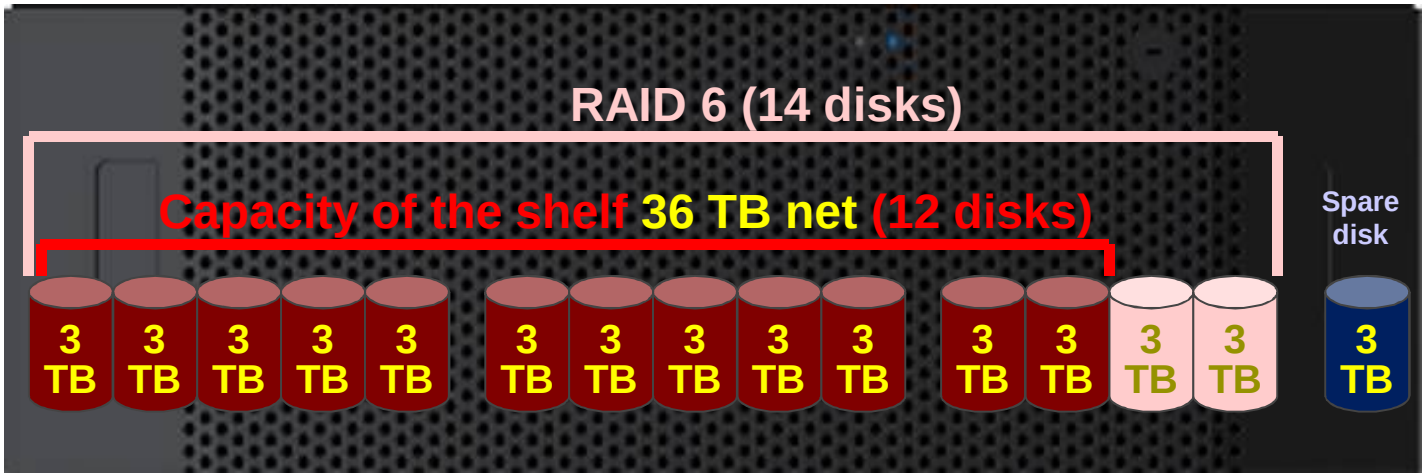
Up to 4 x quad-port 10GBaseT SLICs (SLIC 1 inclusive)

Up to 4 x dual ported 16Gbps FC

Data Domain
Shelves
DELL EMC

Shelf with 36TB net capacity

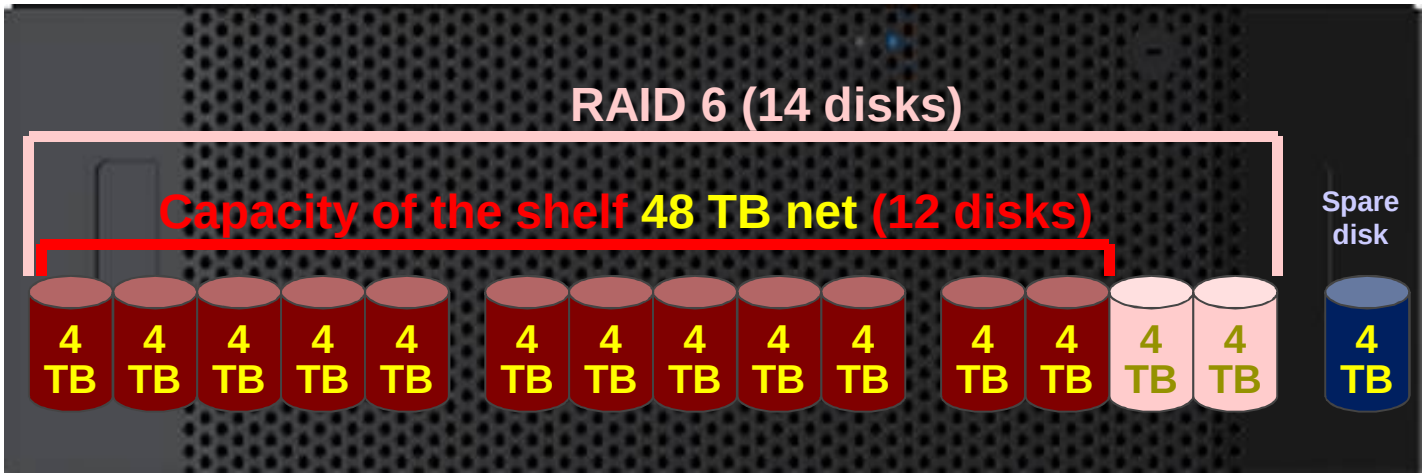
3TB disks



Capacity using Base 2: **31,24 TB**

Shelf with 48TB net capacity

4TB disks

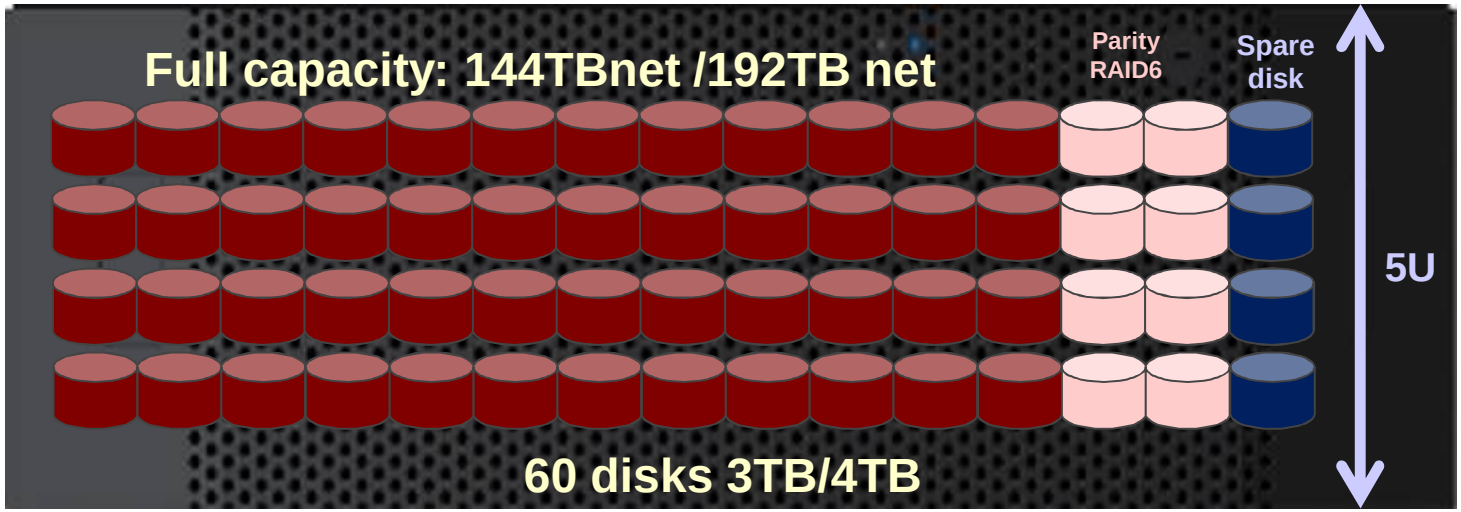


Capacity using Base 2: **42,76 TB**

DELL EMC

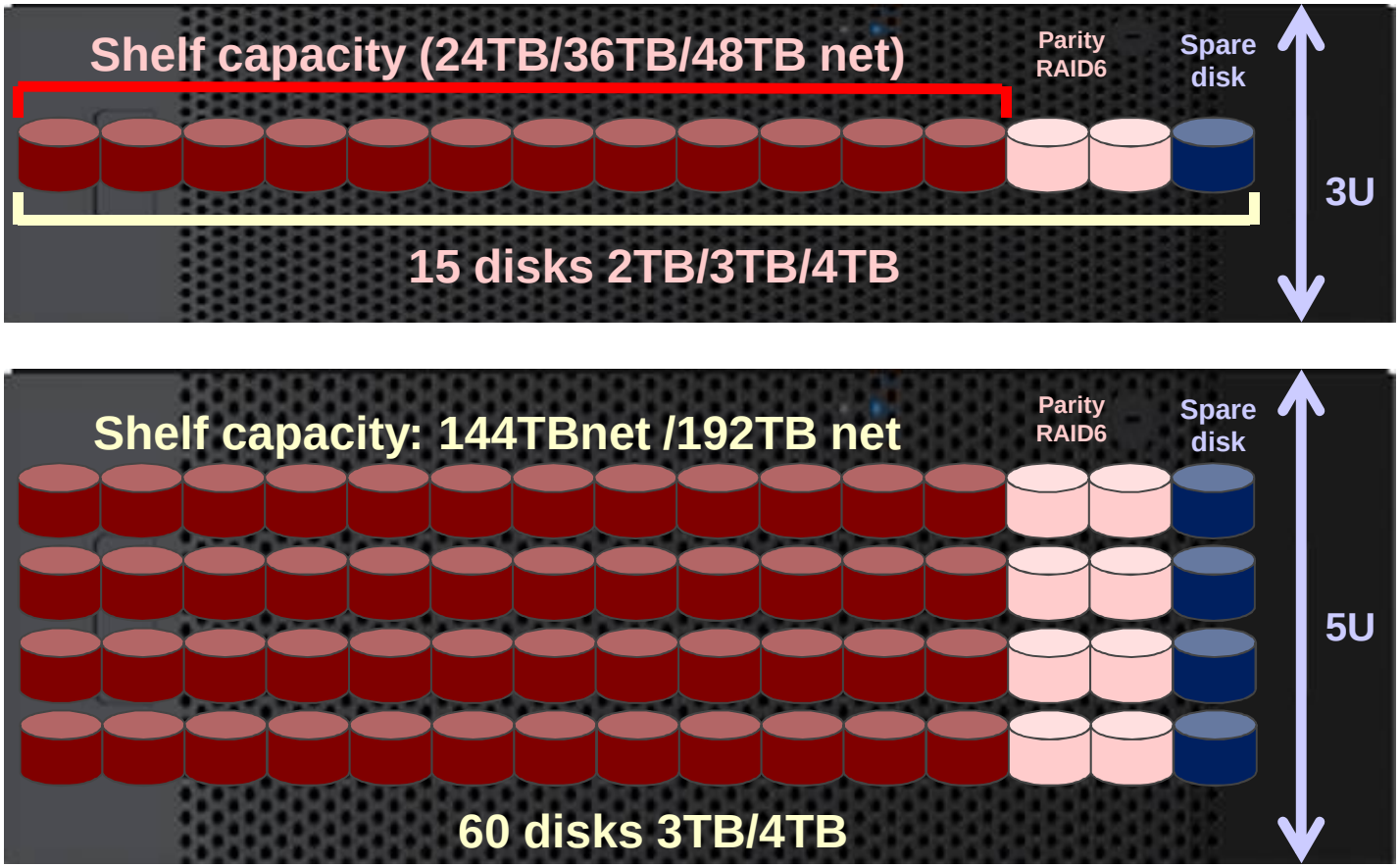
Dense shelf

DS60 (5U)



Shelves in Data Domain

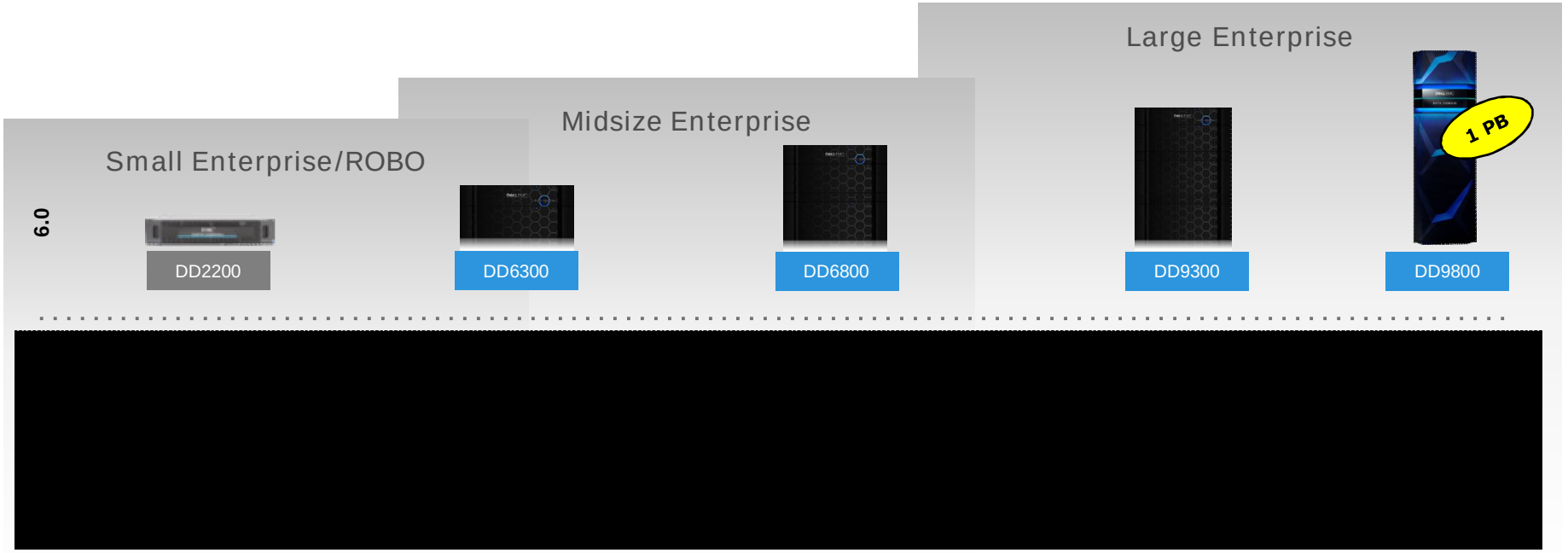
Shelves 3U vs dense 5U DS60 shelves



DELL EMC

Summary
New models
Data Domain
DELL EMC

DD OS 6.0 Portfolio – Mapped to Current Systems



Transformed Data Domain Family

DD6300 Small & Midmarket Enterprise	**DD6800** Midmarket Enterprise	**DD9300** Large Enterprise	**DD9800** High-End Large Enterprise
1.8X Faster	1.3X Faster	1.4X Faster	1.2x Faster

Flash-enabled performance and instant access

Data Domain Family

	DD2200
Speed (DD Boost)	4.7 TB/hr
Speed (other)	3.8 TB/hr
Logical capacity	40–860 TB
Usable capacity	Up to 17.2 TB

[1] Total capacity on Active Tier only
[2] Total capacity with DD Cloud Tier software for long-term retention

New Data Domain Branding

New Data Domain Branding

Data Domain
Virtual Edition
DELL EMC

Data Domain Virtual Edition 3.0

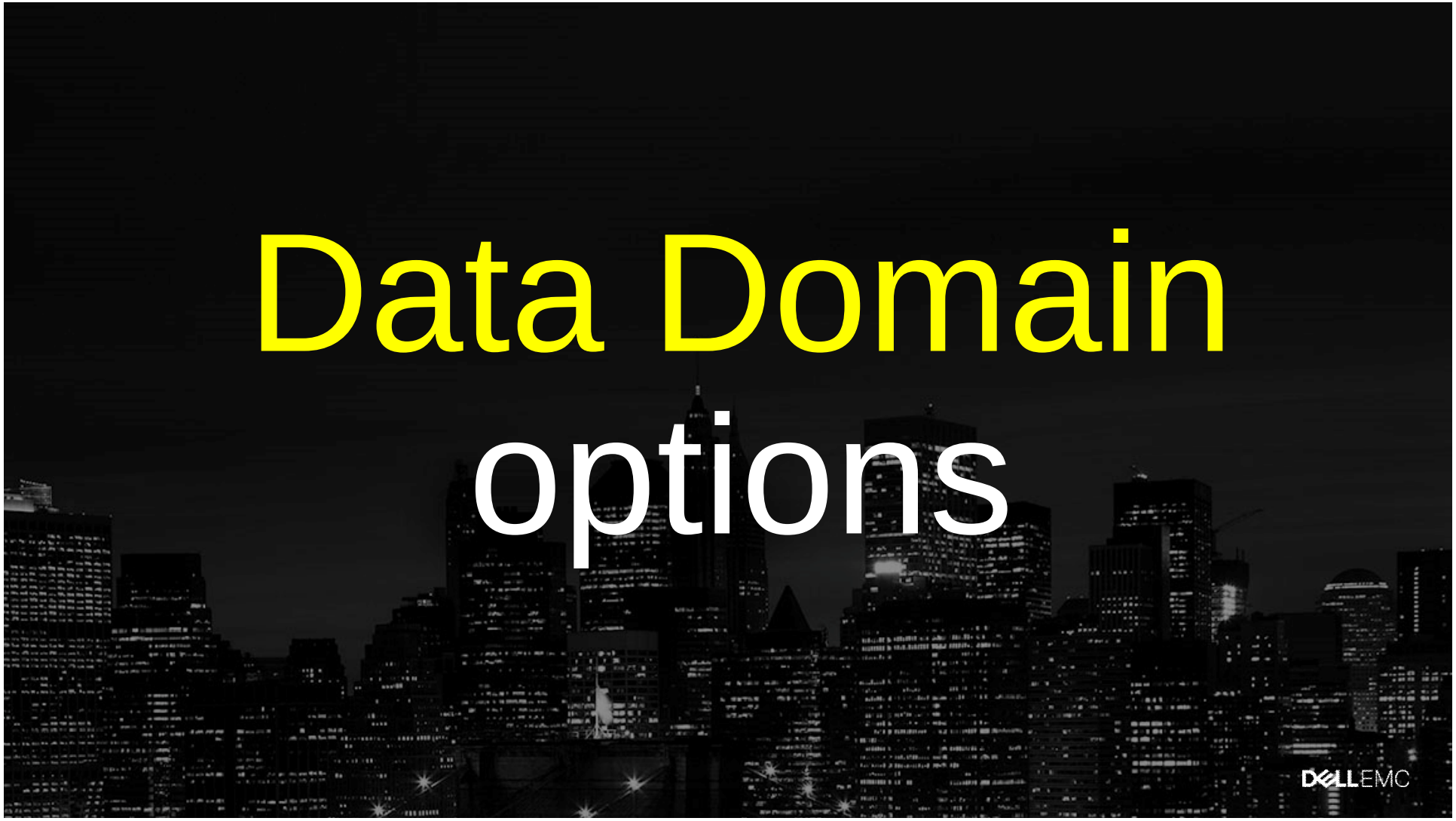
The Power of Data Domain Software Wherever You Need It

- Scale up to 96 TB per instance
- Now supported on Microsoft Hyper-V
- Added cloud functionality
  - DD Cloud Tier
  - Secure Multi-Tenancy
- Can be deployed on VxRail
- Qualified with Dell PowerEdge Servers

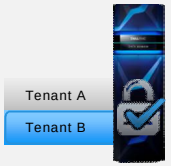
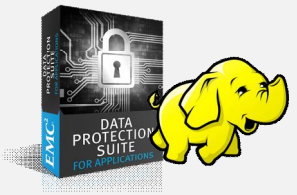
Data Domain Virtual Edition 3.0

	DD VE* at 16 TB	DD VE* at 96 TB
MAXIMUM THROUGHPUT	2.1 TB/hr	4 TB/hr
MAXIMUM THROUGHPUT (DD BOOST)	5.6 TB/hr	11.2 TB/hr
LOGICAL CAPACITY	Up to 800 TB	Up to 4.8 PB
LOGICAL CAPACITY W/ DD CLOUD TIER	Up to 2.4 PB	Up 14.8 PB
MAX USABLE CAPACITY	Up to 16 TB	Up to 96 TB
MAX USABLE CAPACITY W/ DD CLOUD TIER	Up to 48 TB	Up to 288 TB

*Throughput drawn running DD VE with 16 TB & 96 TB instances: Host server: 2x Intel Xeon CPU (6 Cores each) @ 2GHz, 128GB memory, 2x10GbE NIC; Storage: DAS with 3TB 7200RPM SAS Drives, RAID6, Battery Powered HBA Cache Enabled, Disk Cache Disabled


Data Domain
options
DELL EMC

DD OS 6.0 – Software Updates

Introducing Data Domain Cloud Tier	Secure Multi-Tenancy Updates
Only protection storage to natively tier deduplicated data to public, private, or hybrid clouds for long-term retention	Increased Security for service providers & enterprises 
DD Boost Everywhere	**Enterprise-grade Protection for Hadoop**
DD Boost benefits expand to new partners & markets	App owner control and efficient protection for Big Data through advanced DD Boost integration 

Dell EMC Data Domain Systems

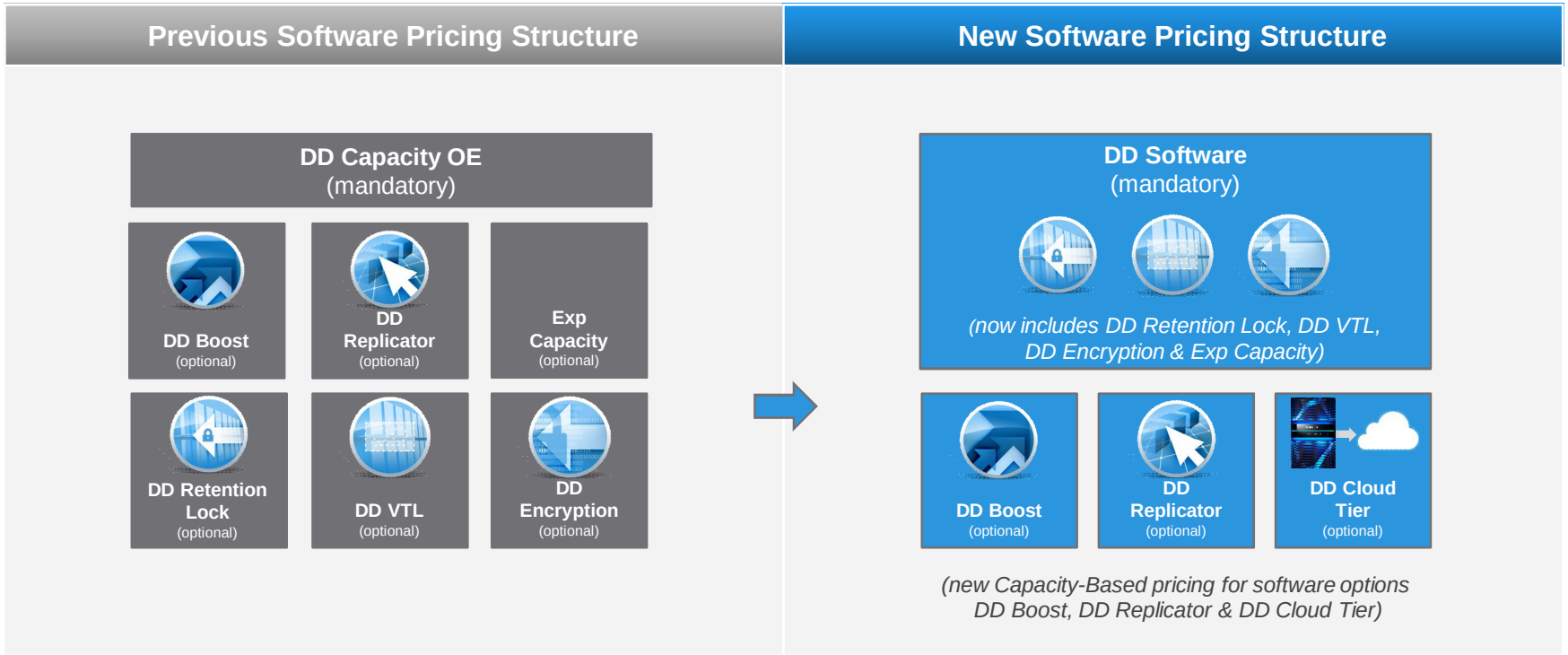
Data Domain is Flash-Enabled & Enterprise Ready

- **DD9800, DD9300, DD6800, DD6300**
  - Category shattering speed and scalability

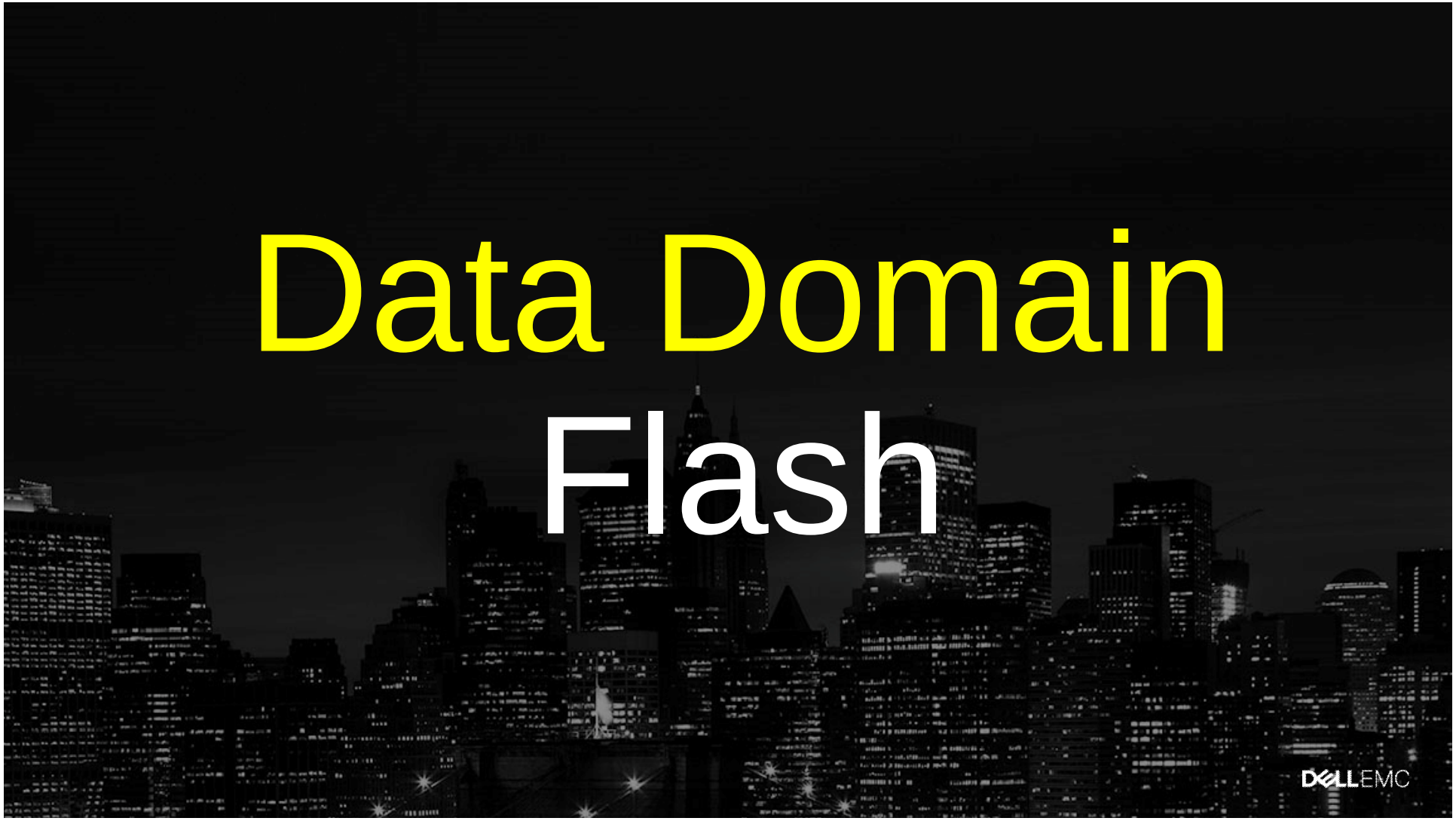
7x	1.5x	5x
More Scalable	Faster	Streams

  - Instant access & restore of VMs faster than ever before
  - High availability from mid market to enterprise

Updated Data Domain Software Pricing Structure



All Data Domain software is now priced uniformly across models.


Data Domain
Flash
DELL EMC

Enhanced VM Protection

- Improved Random IO thanks to the inclusion of flash SDD for metadata
- Backup applications such as EMC Avamar can instantly access 20x faster
- Data Domain delivers up to 10k IOPS with less than 20 milliseconds of latency

VM Backup

Granular access improves performance of VM processes

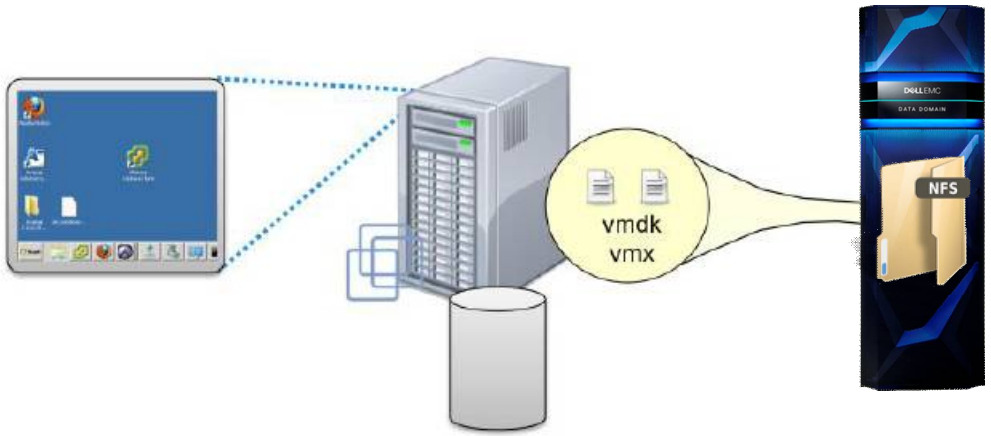
Instant Access

Boot VMs directly from Data Domain using a protection copy

Instant Restore

Achieve shorter recovery time objectives for VMs

DD OS 6.0: Instantly Restore VMs 20X faster



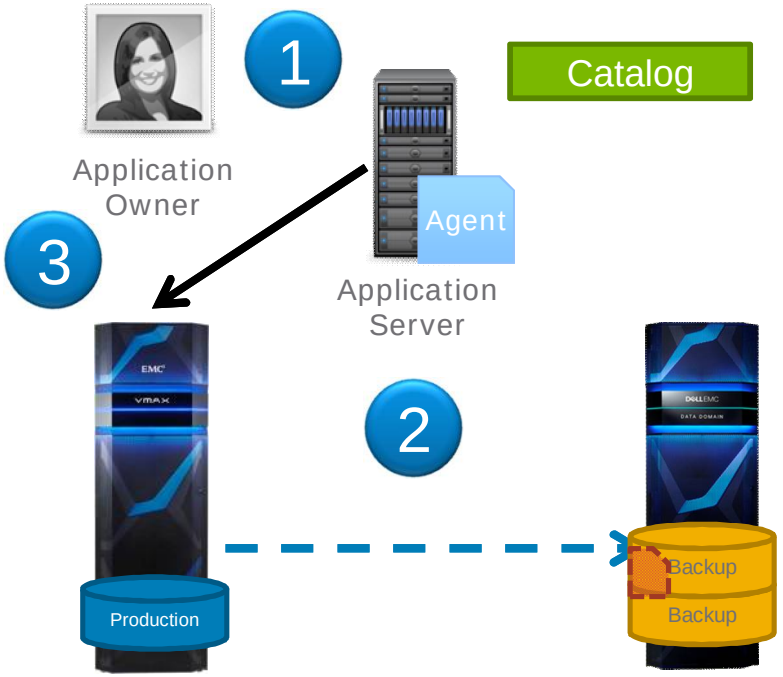
1. Data Domain system is presented as a VMware Datastore via NFS to Backup Application

2. VM is “instantly” accessed by booting from NFS Datastore

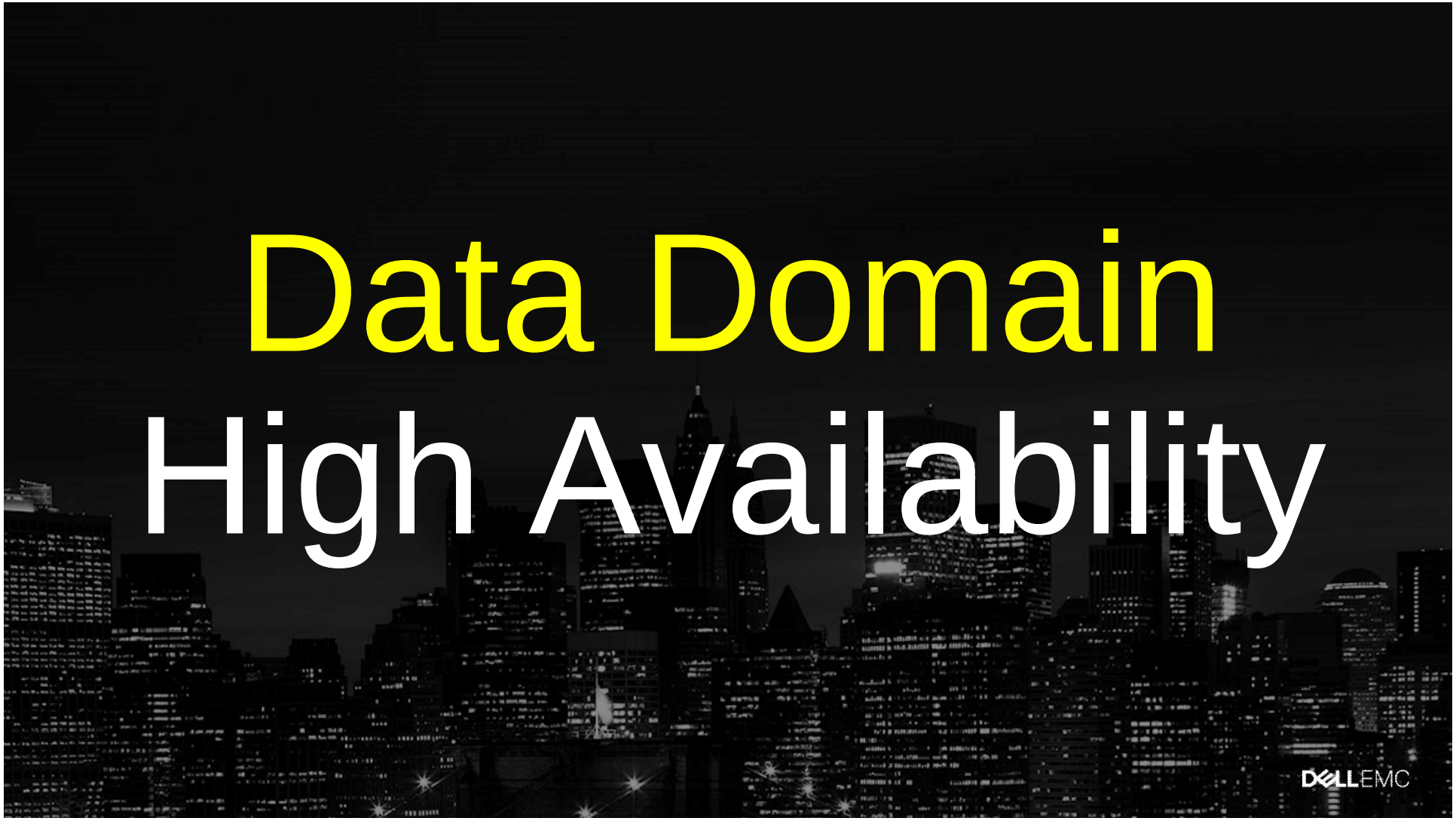
3. Storage vMotion VM to production storage while VM is running

DD OS 6.0: Faster Instant restore with ProtectPoint

Granular Recovery via Instant Access



1. App owner triggers recovery
2. Primary storage connects to the backup image from the Data Domain
3. App owner recovers the specific object(s) to the production database


Data Domain
High Availability
DELL EMC

Expanded High Availability Support

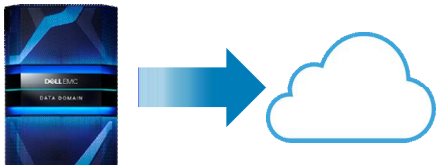
- High availability of backup, archive, and recovery data on Data Domain ensures operational continuity to minimize downtime for users and processes.
- With DD OS 6.0, HA is supported on DD9800, DD9300 & DD6800
- Support on the **DD6800**, now brings high availability to the midmarket

Data Domain
Long retention
DELL EMC

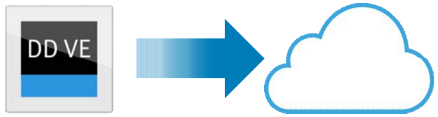
Data Domain Cloud Tier – Performance Update

Unparalleled efficiency for tiering protection storage to the cloud

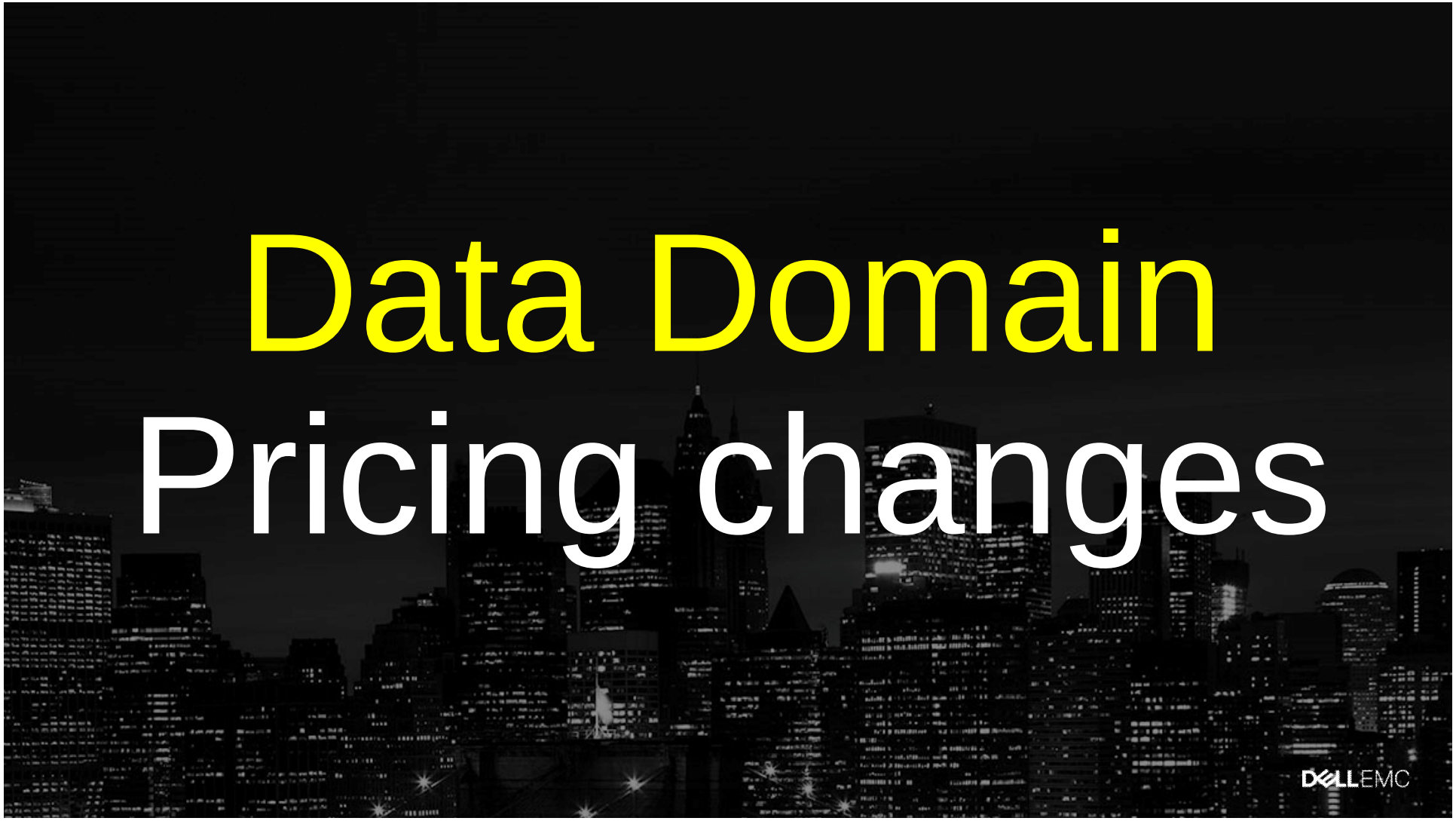
- When moving data in a steady state to **EMC Elastic Cloud Storage (ECS)**, Data Domain Cloud Tier can migrate up to:



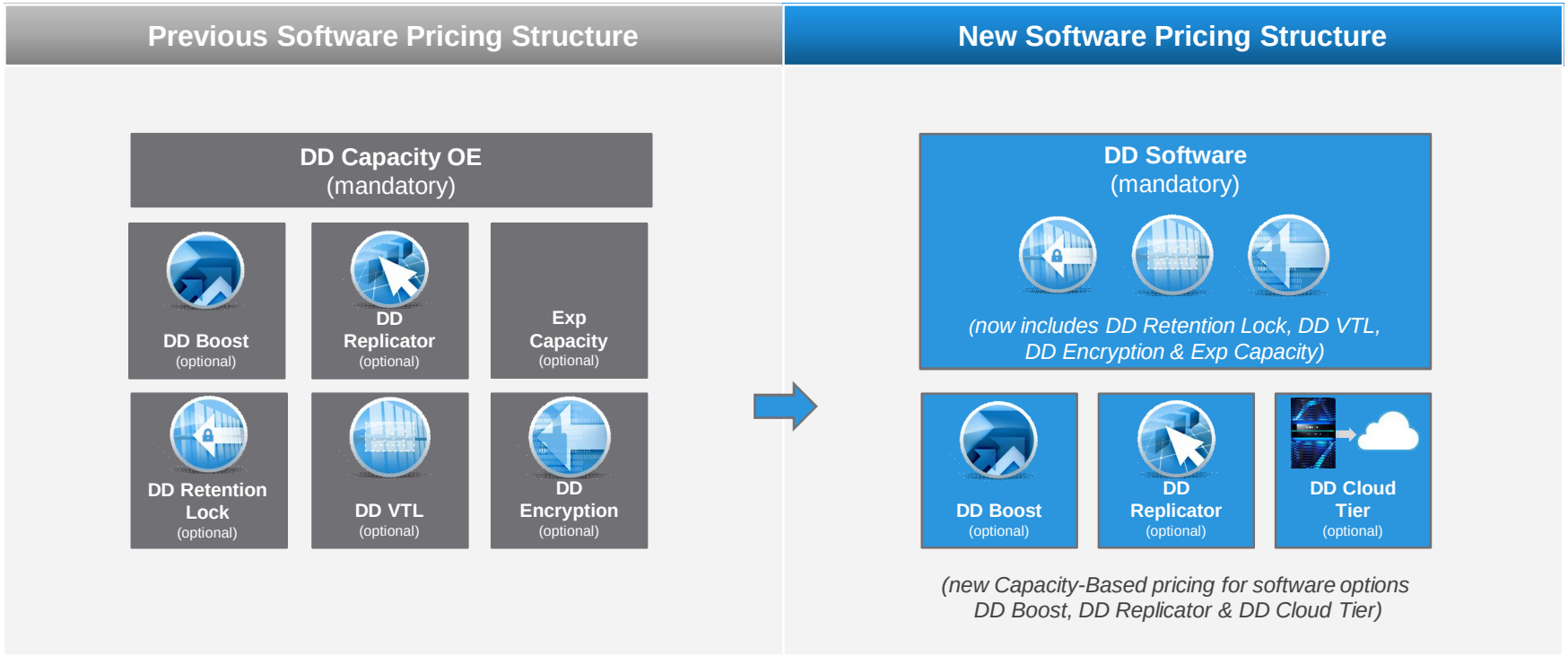
4 TB/hr
on Data Domain systems



0.59 TB/hr
on Data Domain Virtual Edition

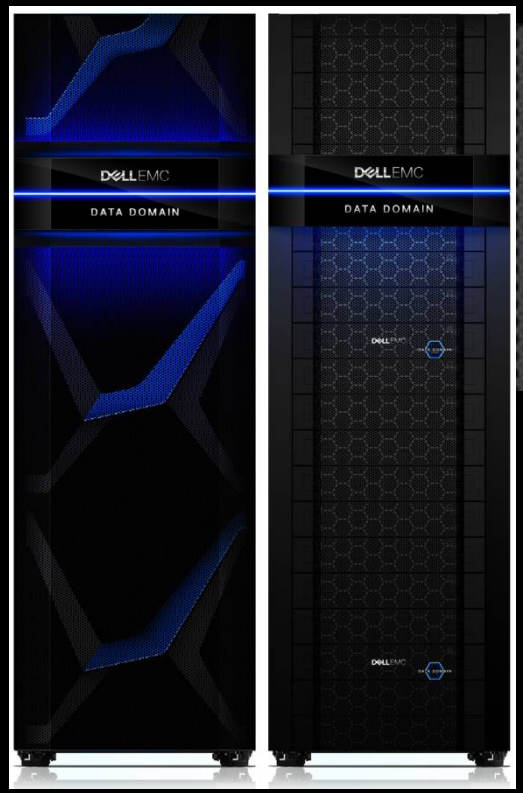

Data Domain
Pricing changes
DELL EMC

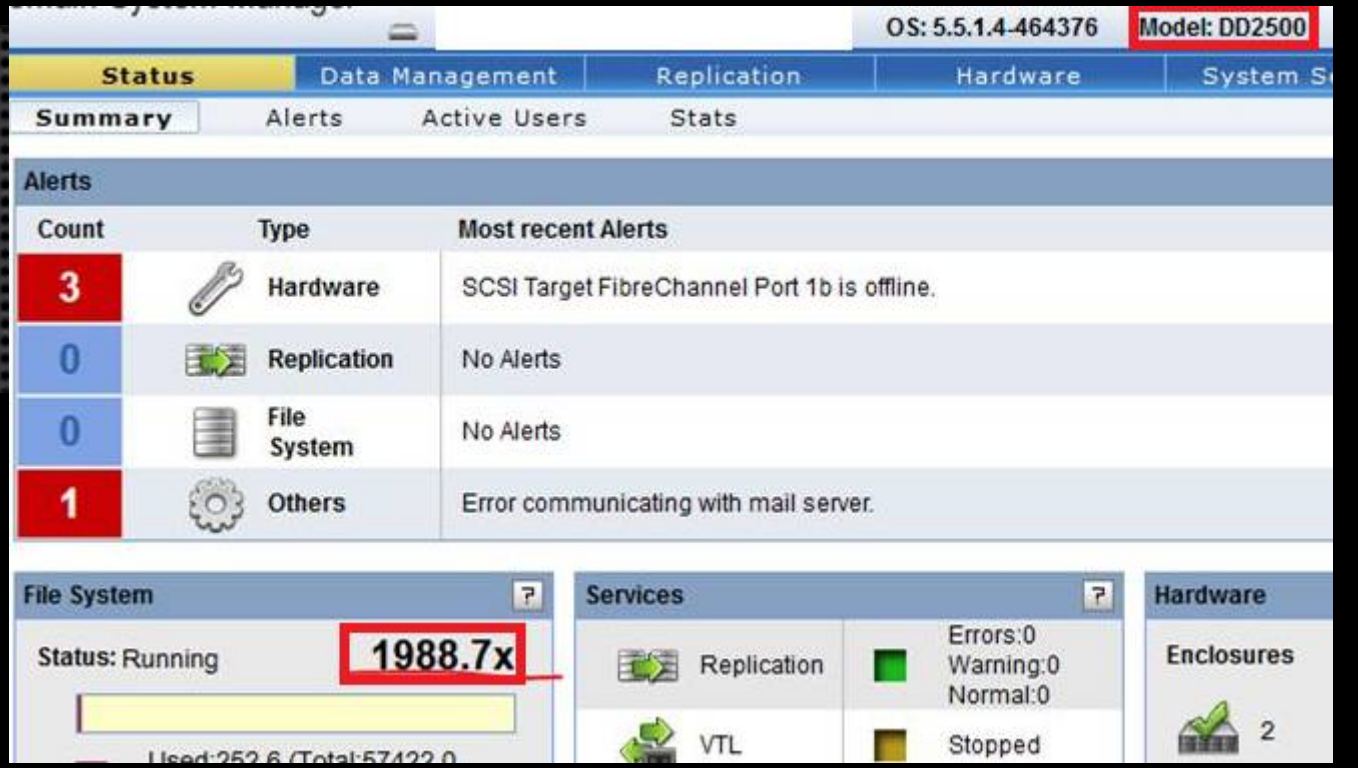
Updated Data Domain Software Pricing Structure



All Data Domain software is now priced uniformly across models.

Questions…





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