

IT Unbound

PowerEdge MX Kinetic Infrastructure

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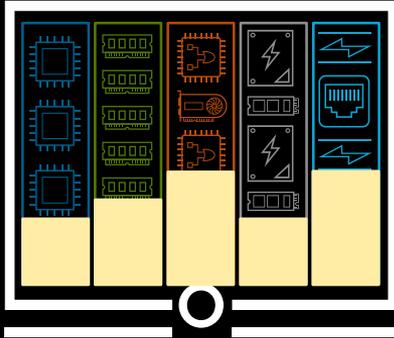
Dell EMC Engineer

Global Compute and Networking



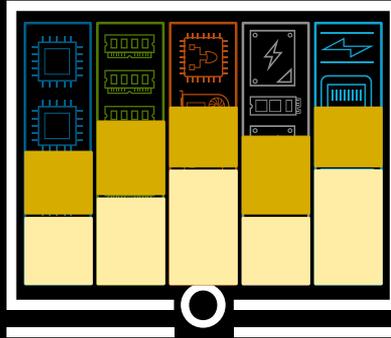
Traditional IT systems have limitations that cause inefficiency

Pre-virtualization era



<20% server utilization

Virtualization era



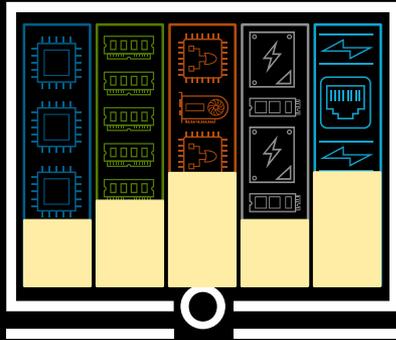
<50% server utilization

Architectural limitations can lead to:

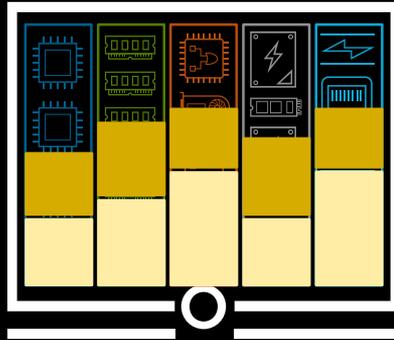
- “Rip-and-replace,” **disruptive upgrades**
- **Time consuming management** processes
- Over provisioning and **stranded capacity**

Source: Direct2DellEMC, [Server Disaggregation: Sometimes the Sum of the Parts Is Greater Than the Whole](#), November 20, 2017

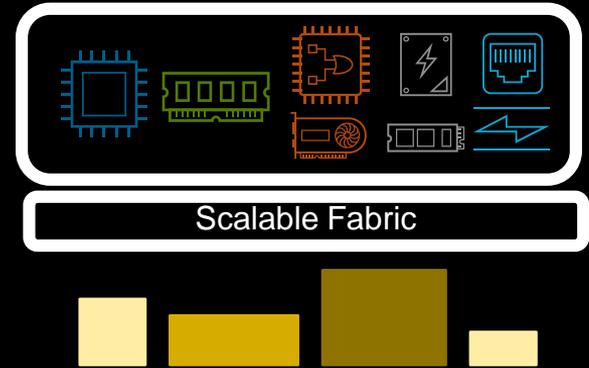
The end state nirvana – kinetic infrastructure



<20% server utilization



<50% server utilization



Resources Optimization

Source: Direct2DellEMC, [Server Disaggregation: Sometimes the Sum of the Parts Is Greater Than the Whole](#), November 20, 2017

What is composable today?

Server

Can logically group servers to be managed as one

Server-attached storage

Can create pools of server-attached storage via software defined storage

Traditional storage

Can create storage pools using traditional SAN/NAS over Ethernet/Fibre Channel

Network

Can compose the network using open software defined networking

What **CAN** the industry compose today?

What **CAN'T** the industry compose today?

DRAM

A trapped resource attached to the CPU

Storage class memory

A trapped resource attached to the CPU

Accelerators (GPUs, FPGAs, SmartNICs)

Are trapped resources attached to the IO bus and CPU

Network adapters

Are trapped resources attached to the IO bus and CPU

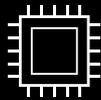
Source: Direct2DellEMC, [Server Disaggregation: Sometimes the Sum of the Parts Is Greater Than the Whole](#), November 20, 2017)

Kinetic infrastructure – path toward full composability

KINETIC INFRASTRUCTURE



Cloud-like velocity & serviceability + on-premises speed, reliability & security
Physical, virtual & containerized use cases



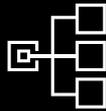
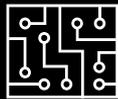
Future ready



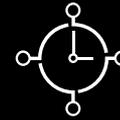
Improved TCO/ROI



Risk mitigation & management



On-demand creation of compute & storage
Reclaim & repurpose stranded capacity



Accelerated application & service delivery
Shift from tactical to strategic focus

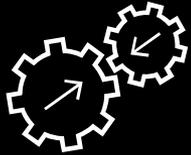
Introducing PowerEdge MX

Traditional and transformational workloads on one, adaptable infrastructure.

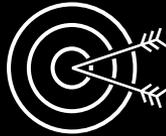


Dynamically scale and respond to changing needs

Streamline transition to new fabric generations and architectures

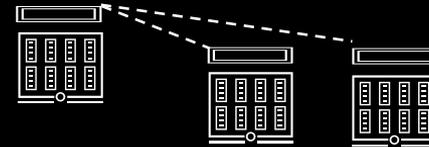


No mid-plane design



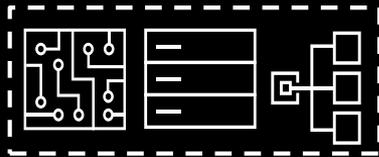
No single point of failure

Pay-as-you-grow expansion, ensure maximum performance with scalable multi-chassis fabric

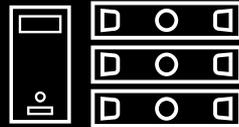


Ultra-low latency 25GbE today, to 50GbE, to 100GbE and beyond

Manage all resources from one console, expand across all PowerEdge servers



Holistic control compute, storage, fabric + rack and tower

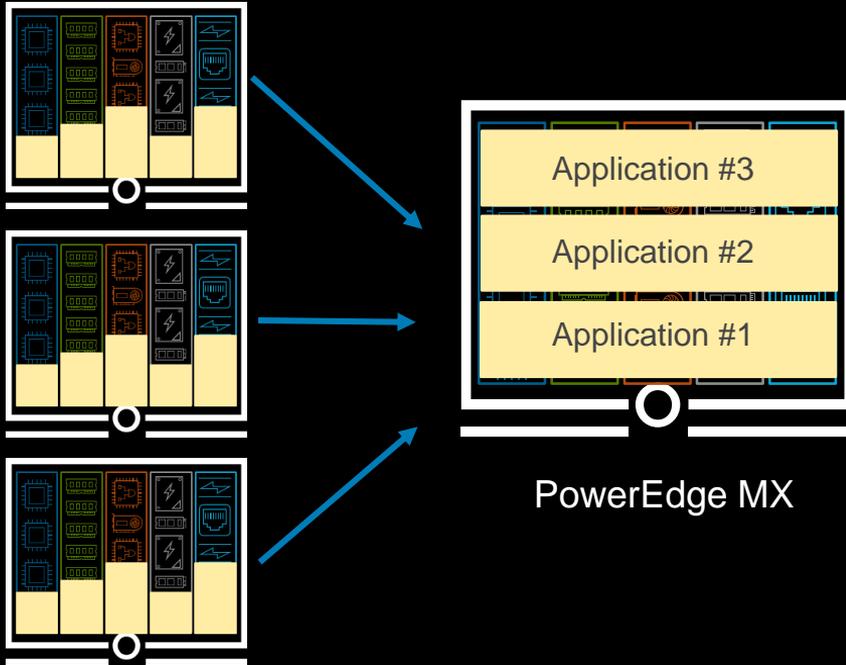


Increase vSAN performance with scalable in-server and local-attached storage, low-latency network



Up to 118 HDD/SDDs per chassis; 112 drives local and six compute sled

PowerEdge MX – capacity and cost right-sized



- Configuration optimization
- Liberation of stranded capacity
- Increased agility through reallocation
- No need to overprovision
- Independent acquisition of resources
- Improved control of resources

PowerEdge MX - built for the software-defined era

- **Software-defined and traditional workloads** - High performance internal and external attached storage
- **Big data analytics** – High performance and resilient platform with large memory capacity



- **Traditional database** - High availability and security
- **High performance workloads** - Simple upgrade to newest I/O technology

PowerEdge MX modular components

Delivering innovation and longevity needed to realize IT transformation

Compute



MX740c & MX840c
2 socket & 4 socket compute sleds

Storage



MX5016s
Direct-attached SAS storage sled

Networking



MX5108n, MX9116n, MX7116n, MXG610s
Ethernet & Fibre Channel switches

Chassis



MX7000
7U modular enclosure

with intelligent automation technology

OpenManage Enterprise Modular & iDRAC

PowerEdge Towers, Racks, Modular Infrastructure THE BEDROCK OF THE MODERN DATA CENTER



OpenManage Enterprise
INTELLIGENT AUTOMATION



Powered by Intel® Xeon® Scalable Processors

#1

INDUSTRY'S

Server Portfolio
PowerEdge

Source: IDC Quarterly Server Tracker, Q4 2017

Dell EMC Ready Solutions for HPC



Dell EMC Ready Bundle for HPC

- Advancing HPC
- Democratizing HPC
- Optimizing HPC



Dell EMC Ready Bundle for HPC Research

- Optimize investments
- Customize a solution
- Test and tune



Dell EMC Ready Bundle for HPC Life Sciences

- Faster time to production
- Better performance
- Easier scalability



Dell EMC Ready Bundle for HPC Digital Manufacturing

- Faster performance
- Easier scaling
- Reduced risk



Dell EMC Ready Bundle for HPC NFS Storage

- Low cost
- Performance
- Scalable



Dell EMC Ready Bundle for HPC Lustre Storage

- High performance
- Massively scalable
- Cost-effective

HPC Solution Support and Deployment Services



ProDeploy
for HPC

1

**HPC Add-on:
Individual
nodes**



2

**HPC Add-on:
Storage**

Asset-level support

ProSupport

or

**ProSupport
Plus**



Solution support

**ProSupport
Add-on
for HPC**

Cluster Management Software



Operating System



Networking



Storage



Server



D~~E~~LL EMC