

# IT Unbound

## PowerEdge MX Kinetic Infrastructure

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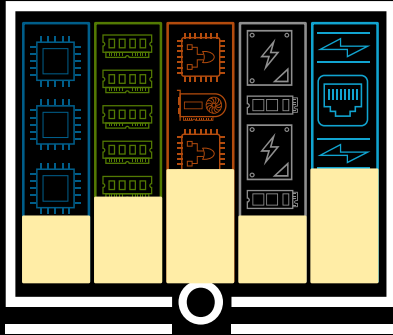
Global Compute and Networking



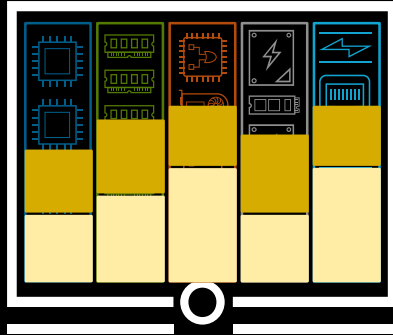
# Traditional IT systems have limitations that cause inefficiency

Pre-virtualization era

Virtualization era



<20% server utilization



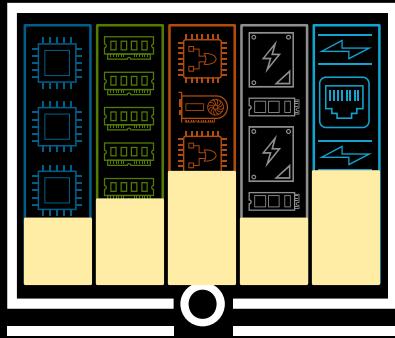
<50% server utilization

Architectural limitations can lead to:

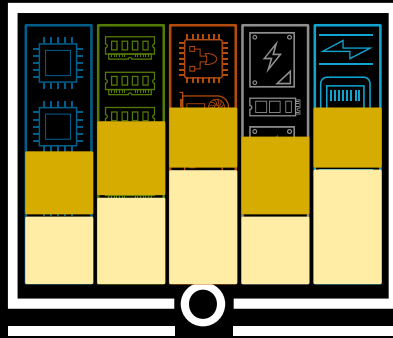
- “Rip-and-replace,” **disruptive upgrades**
- **Time consuming management** processes
- Over provisioning and **stranded capacity**

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

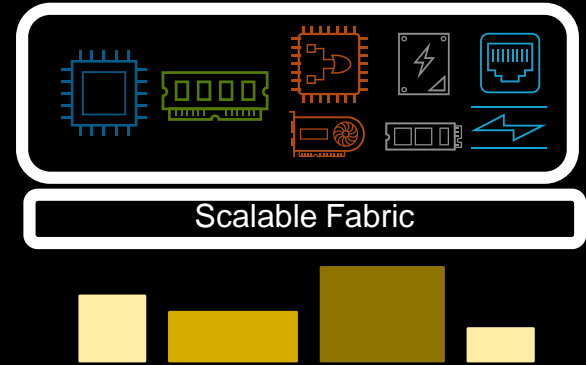
# The end state nirvana – kinetic infrastructure



<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



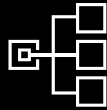
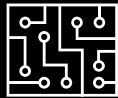
Future ready



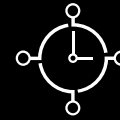
Improved TCO/ROI



Risk mitigation & management



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



Accelerated application & service delivery  
Shift from tactical to strategic focus

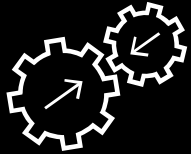
# Introducing PowerEdge MX

Traditional and transformational workloads on one, adaptable infrastructure.



# Dynamically scale and respond to changing needs

**Streamline transition to new fabric generations and architectures**

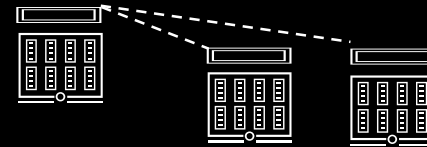


No mid-plane design



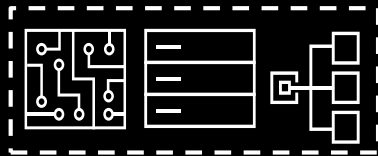
No single point of failure

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

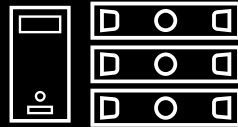


Ultra-low latency 25GbE today, to 50GbE, to 100GbE and beyond

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



Holistic control compute, storage, fabric + rack and tower

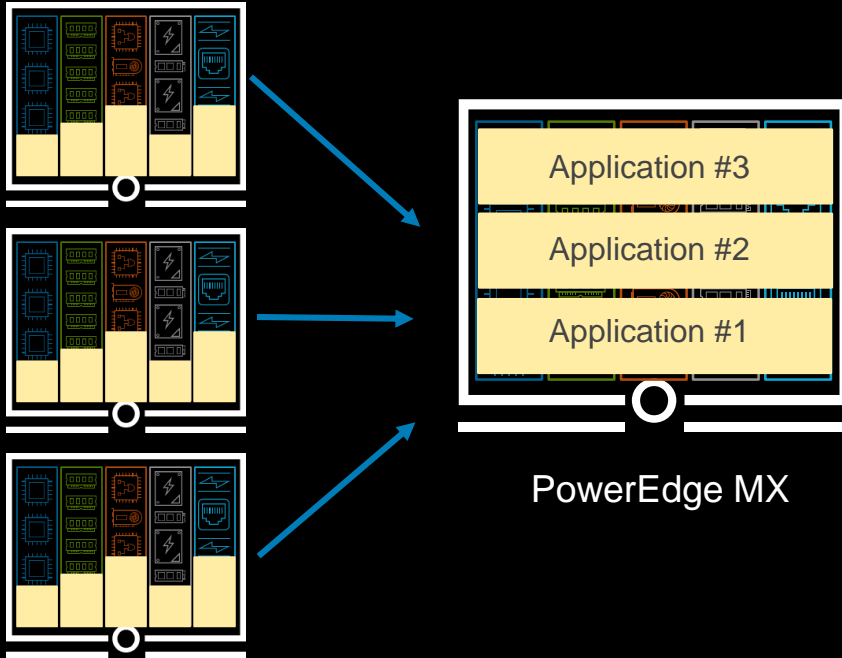


**Increase vSAN performance with scalable in-server and local-attached storage, low-latency network**



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