DST 16

PowerEdge Servers Driving Workloads

Roger Andersson

r_andersson@dell.com

The **CIO Paradigm**

Business Priorities

- ✓ Deliver business results to shareholders
- ✓ Improve customer satisfaction & innovate
- ✓ Cut/maintain costs
- ✓ Keep us competitive
- ✓ Improve employee productivity

Technology Priorities

"Keeping the Lights On"

- ✓ Manage current workloads
- ✓ Application rationalization
- ✓ HW updates & migrations
- ✓ Reduce costs
- ✓ Protect our data

Accelerating the Business

- ✓ Optimize workloads
- ✓ Software-defined X
- ✓ Utilize new IT benchmarks
- ✓ Deliver ubiquitous mobility
- ✓ Implement Cloud Computing

Customer-inspired, Dell-engineered solutions

From the largest hyperscale data centers to the smallest home offices

- Consistent, stable architectures
- Flexible platforms, adaptable infrastructures
- Optimized by workloads and environment

The Dell Enterprise Server Solutions Portfolio

Workload-optimized solutions for any size enterprise

Traditional

PowerEdge T series

Tower platforms optimal for remote offices, small and medium businesses

PowerEdge R series

Rack-optimized designs for improved density in medium and larger businesses

Converged Infrastructure

PowerEdge VRTX

Integrated IT platform designed from the ground up for office environments

PowerEdge FX

Redefining data center converged architecture

PowerEdge M series

Blade platform for datacenters needing maximized density and efficiency

PowerEdge C series

Optimized for distributed workloads, scaled-out applications and cloud deployment

Data Center Solutions

Solutions specifically tailored for the world's largest scaled-out application deployments

General purpose — Distributed applications

+

- Dell Storage
- Dell Networking
- Dell Software
- Dell Services

Data Center Evolution

Service demands are driving infrastructure changes

Yesterday's IT

Proprietary Server

Proprietary Switch

Proprietary Storage

Today's IT

Virtualized Standard Server

Proprietary Switch

Proprietary Storage

Future Ready IT

Software-Defined Standard Server

- Compute
- Storage
- Network

Modern distributed applications

Legacy-Defined Proprietary Platforms

- IT agility and efficiency is required for business competitiveness
- Maintaining application scalability and performance are critical
- Standardized HW and simplified management are needed to reduce IT budget growth

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PowerEdge 1-socket servers – the latest generation

T130	T330	R230	R330
Outstanding first server or replacement server for SOHO and Small Business.	Excellent first server or replacement server for SMB. Also highly attractive ROBO server for large institutions.	Powerful 1-socket rack server for SMB and ROBO.	1-socket rack server for SMB and ROBO, enhanced with greater HA and serviceability

New servers

Balanced Storage - Ideal for Exchange

R730xd

Users continue to ask for balanced local storage capacity

Need for storage-hungry workloads like Exchange, SharePoint

13th Generation PowerEdge brings the first 2U server with 130TB of local storage

R730xd is designed for storage-centric workloads like UC&C

- 130TB of local storage within a fully featured 2U rack server
- Capacity is a primary design point for Microsoft Exchange with little consideration for performance. Flash make sense for actively used email and can address “spike” usage. The capacity-based storage is ideal for archiving
- 33% more capacity and spindles (16)
- One R730xd can
  - Host 100 thousand 1GB mailboxes
  - Host multiple SharePoint instances
- Deliver increased Microsoft Exchange performance with Flash based storage by 30% or more

Introducing the FX Architecture

Dell's revolutionary approach to converged infrastructure for enterprise computing

Optimize Workloads

Tailor infrastructure precisely, with the right compute, storage, caching, and connectivity to meet specific workload needs

Maximize Efficiency

Easily and rapidly scale your workloads with an unprecedented level of density, allowing more services using fewer resources resulting in overall lower costs

Simplify Complexity

Simplify management of increasingly complex data centers using the flexibility of FX platforms to standardize operations for higher productivity

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The FX architecture is designed to make building workload specific solutions as easy as putting blocks together

Deploy only the resources you need…
Only when you need them.

* This is an animated slide

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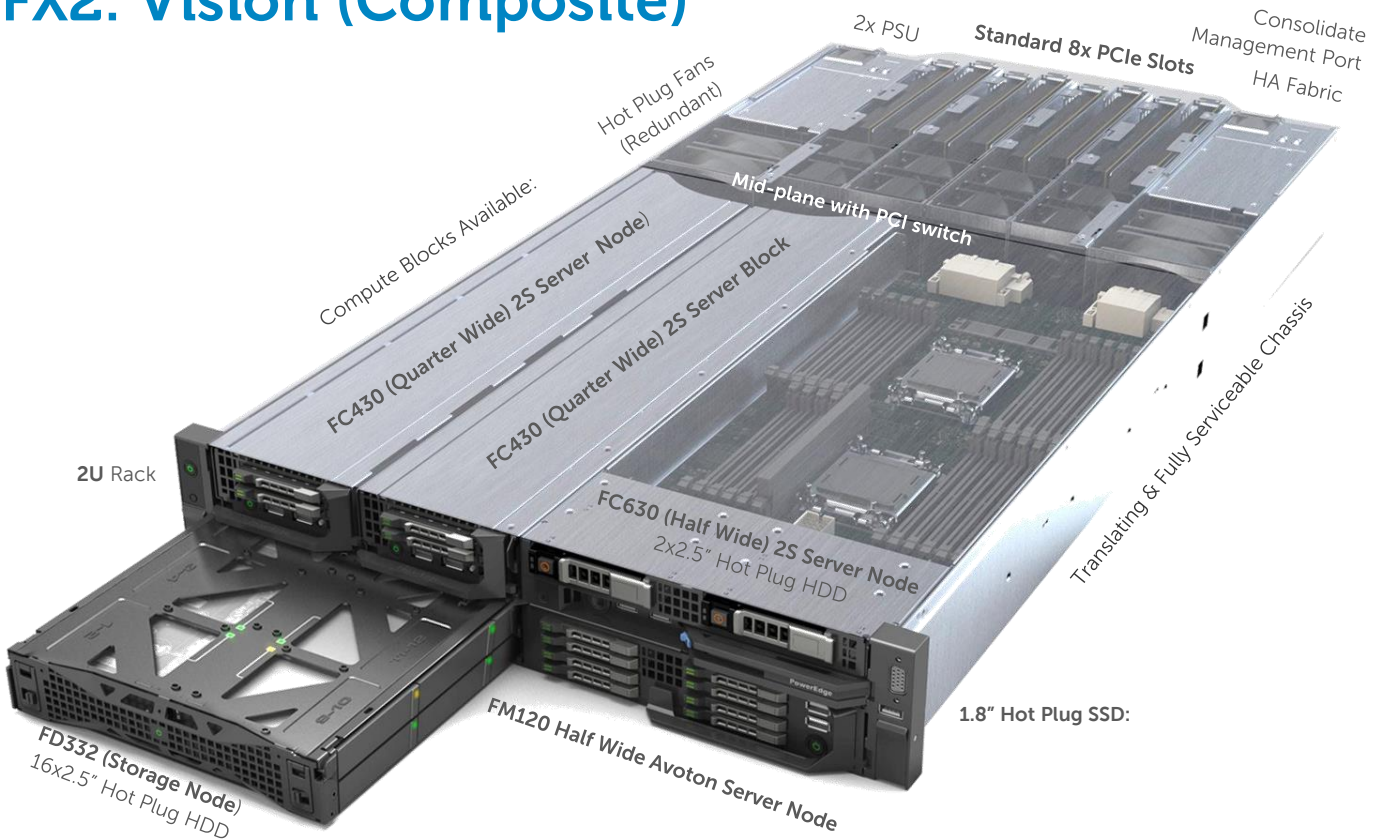
FX2: Vision (Composite)



The PowerEdge FC630 server

2x Intel E5-2600 v3 CPU
24 x DIMM slots
Up to 4x10 GbE LOM
NVMe SSD option

A single FC630 server block with two 2.5" drives

A single FC630 server block with eight 1.8" drives

4 FC630 server blocks in a fully loaded FX2 enclosure each with 8 1.8" SSDs

2x Intel E5-2600 v3 CPU
8 x DIMM slots
Up to 2x10 GbE LOM

The PowerEdge FC430 server

8 FC430 server blocks in a fully loaded FX2 enclosure

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4x Intel E5-4600 v3 CPU
48 x DIMM slots
Up to 8x10 GbE LOM
NVMe SSD Option

The PowerEdge FC830 server

1 FC830 server blocks with eight 2.5" drives

2 FC830 server blocks (each with 16 1.8" SSDs) in a fully loaded FX2 enclosure

PowerEdge FM120x4 server

Energy Savings and Density for Light Workloads

- Density and energy efficiency in small bite size
- Ideal for web servers, light data analytics and hosting
- Low acquisition cost & easy scalability
- Independent management of each server

4 sleds each with 4 microservers
Individually serviceable sleds

Each server:

- 1 Intel Avaton CPU 2-8 cores
- 2 UDIMMs
- 1x 2.5" or 2x 1.8"
- 2x 1GE (2:1 aggregation)
- iDRAC

Hot swap power supplies 2x 1100
1GE pass through Module
IO Aggregator

PowerEdge FD332 flexible internal disk

- **Massive DAS capacity opens up many possibilities**
  - Up to 16 direct attach (DAS) SFF storage devices - SSDs and/or HDDs , both SATA and SAS
  - Add 48 direct attached drives to a single server in just 2U
  - 12Gb/s SAS
- **Mix and match pass-through & RAID I/O options via Single or Dual PERC9 RAID controller**
  - Each controller has a x8 Gen3 PCIe link to FX2
- **Accelerate and simplify deployment of storage resources**
- **Service drives independently, without interrupting concurrent operations**

PowerEdge FN-Series I/O Aggregator

FN-series offers I/O Aggregation for the Dell FX2 chassis

Simply aggregates Ethernet (including converged storage traffic) from compute nodes to Top of Rack switches

BEFORE

AFTER

Each chassis can hold up to 2 x I/O Aggregators

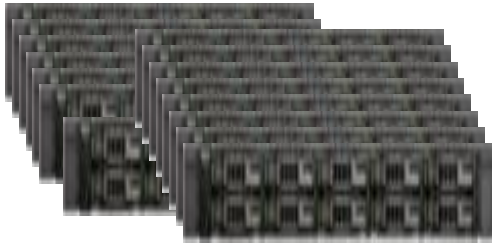
FRONT

BACK

Ease of Use Through Pre-Configuration

Web Servers: FM120s = massive consolidation

1U servers



40 Web Servers
per rack
3 cables
per server

LAMP
Linux Apache MySQL PHP,Perl,Python

FM120
16 Intel Atom processors per 2U

320 Web servers
per rack
1.2 cables
per server

Get **8x more servers** per rack **with** **2.5X fewer** cables per server **!**

Grow web hosting capacity within existing facility space limits
Save on OPEX with energy efficient microservers

Get the details from the Principled Technologies whitepaper:
http://www.principledtechnologies.com/Dell/PowerEdge_FX2_FM120x4_0215.pdf

Oracle RAC: FC630s & Fluid Cache

4 FC630s running Fluid Cache Software, configured as a RAC cluster

S4810 switches

Cached data is shared across a high speed private network

Each FC630 in this configuration has 1 800GB Express Flash PCIe SSD.

"Hot" data from the SAN is cached closer to the server in low latency Express Flash drives to accelerate application performance

Get **3.7x** more transactions **!**

Host an Oracle RAC cluster and Fluid Cache for SAN in a single FX chassis – and significantly out perform the competition

Get the details from the Principled Technologies Whitepaper:
http://salesedge.dell.com/doc?id=0901bc828093af1e&ll=sr

Big Data: with FC430s, FD332s & hadoop

Get 5 times* the density of prior generation at the same price

20 x R710 per rack

80 x 4 FC430 + 2 FD332
per rack

Compute and storage modularity enables new data center efficiencies

Get **5x more compute** per rack **at** **Same Cost** per node **!**

A viable and cost effective large data analytics approach:
cluster scale out simplicity- fast local storage – easy scalability

SQL: consolidate workloads by > 4 times*

Using FD332s an FC830 and SanDisk DAS Cache

One FC830 with eight 2.5" drives and 2 FD332 storage blocks in a single FX2s chassis

Get **43X** More orders per min + **4.5X** More VMs + **5X** Available storage drives !

Accelerate data access with ultra low latency **Express Flash** NVMe PCIe devices using **SanDisk DAS Cache** caching and high capacity **FD332 storage**

Get the details from the Principled Technologies whitepaper:
http://www.principledtechnologies.com/Dell/PowerEdge_FX2_FC830_FD332_database_consolidation_0615.pdf

* compared to the previous generation PowerEdge R820 server

VDI: with VMware vSAN on FC430 & FD332

4 FC430s running VMware Virtual SAN

Get **72%** **More users** **in** **91%** **less space** **!**

In this configuration, each FC430 is mapped to half the drives in an FD332, using the dual RAID controller option.

Viable and cost effective large data analytics approach- cluster scale out simplicity- local storage - easy-to-repeat for growth.

Get the details from the Principled Technologies whitepaper:
http://www.principledtechnologies.com/Dell/PowerEdge_FX2_FC430_VMware_VSAN_VDI_0215.pdf

Introducing the **Dell PowerEdge C6320**

Ultimate compute performance in a dense 4-in-2U package for HPC and hyper-converged solutions and appliances with the Intel Xeon E5-2600 v3 processor family

2X
performance improvement on Linpack benchmark

2U
height

50%
more cores per node

72TB
onboard storage

16
DDR4 DIMMs

iDRAC8
automated management

Purpose-built for a wide variety of high-performance computing fields

- Scientific research
- Financial services
- Oil & gas exploration
- VDI
- SDS
- Hyper-converged appliances

Introducing the **Dell PowerEdge C4130**

Industry-leading accelerator density and unmatched flexibility for the most demanding HPC workloads

8.36
double-precision teraflops per U*

1U
height

up to **2x**
Intel Xeon E5-2600v3 CPUs

up to **4x**
300W PCIe accelerators

16x
DDR4 DIMMs

400%
more PCIe accelerators per processor per U than the HP SL250s Gen8 (SL6500)

Purpose-built for a wide variety of high-performance computing fields:

Technical computing

Scientific research

Financial services

Oil & gas exploration

Medical imaging

* Theoretical double-precision value from 2x Intel Xeon E5-2690v3 + 4x NVIDIA Tesla K80 GPUs

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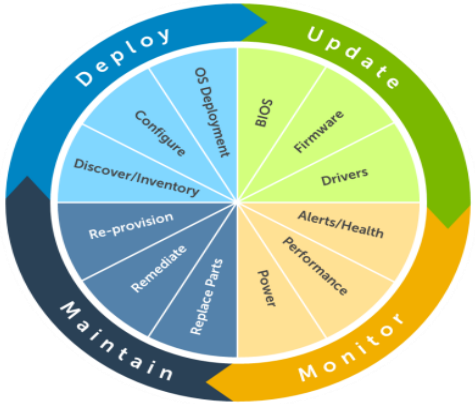
Saving significant management cost

Reducing TCO with simplified and streamlined lifecycle management processes



The engine behind: iDRAC with Lifecycle Controller

Automation

"ZeroTouch" automated deployment

Rack, cable and walk away!
No special technician training required

Automated server updates

Latest updates are always staged in the server, ready to be applied, reducing maintenance windows

Automated technical support

Greatly reduces time to identify and resolve server issues

Simplification

Enhanced agent-free solution

Real-time server performance monitoring and SAS storage health monitoring

Simplified management "at-the-box"

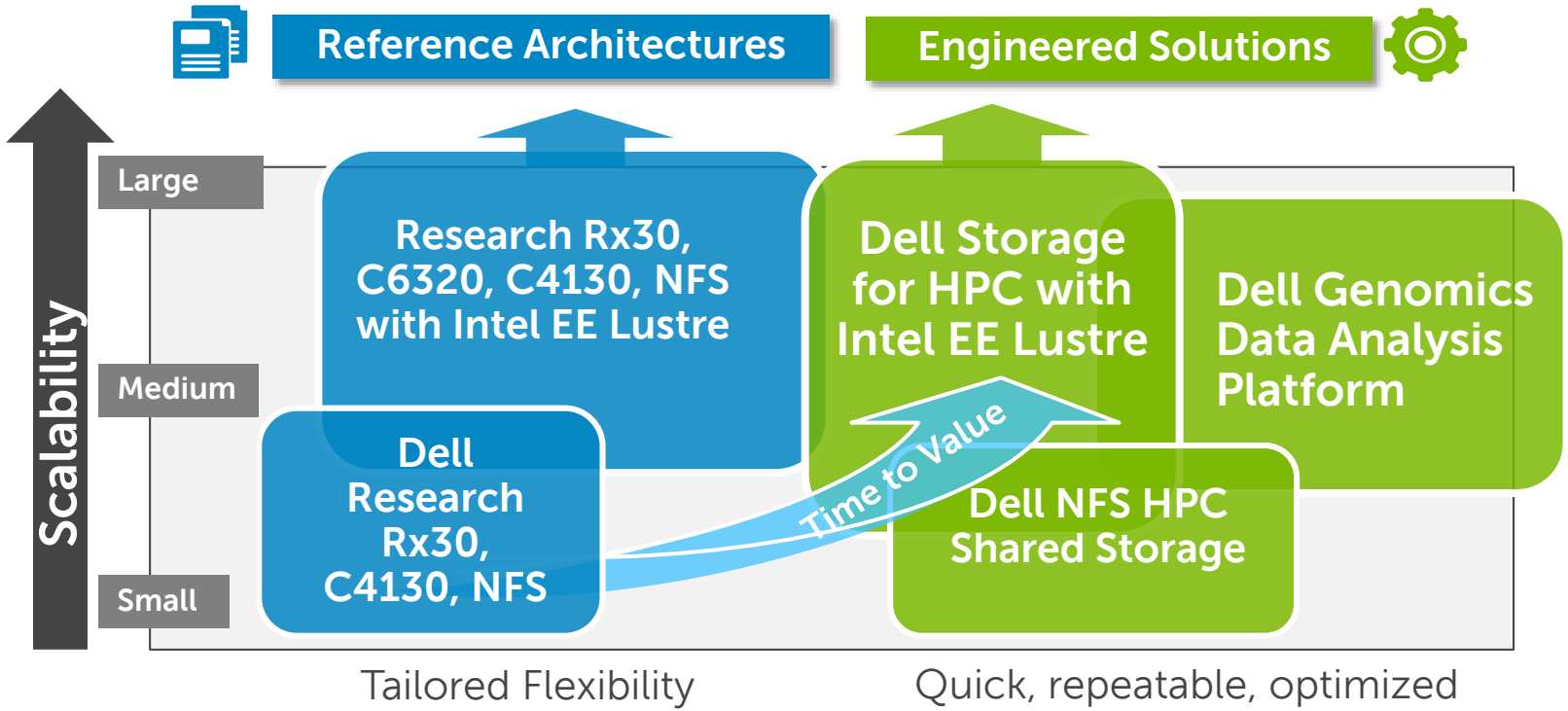
Deploy, configure and troubleshoot servers with all the information you need at your fingertips

OpenManage Essentials

Automated lifecycle management with a 1-to-many console, and profile based configuration capabilities

Dell Blueprint for High Performance Computing

Deliver insights faster and more efficiently



Erbjudande – finansiera Dell 13G servrar till 0% ränta

Dell Financial Services

Dell 13G Servrar
0% finansiering

Ny infrastruktur sätter press på IT budgeten. Använd Dell Financial Services (DFS) för att installera den senaste 13:e generationens PowerEdge servrar från Dell och sprid kostnaderna över 3 år. Med 12 kvartalsvisa betalningar kan du enkelt hantera din IT-budget med förutsägbara betalningar samtidigt som du kan nyttja den senaste tekniken utan initiala kapitalkostnad.

Sprid kostnaderna och betala över tid för den nya tekniken. Underlätta kassaflödet och få en snabbare avkastning på dina IT-investeringar.

Tillgänglighet	Kommersiella kunder i Sverige
Utrustning	Dell 13G servrar med tillhörande services & mjukvara (upp till 20%) eller om del av en lösning med 50% servrar och lagring gäller erbjudandet hela lösningen.
Erbjudande	Finansiell lease med 0% ränta
Betalnings-villkor	Kvartalsvisa betalningar i förskott (12 betalningar under 3 år)
Belopp	85.000 - 2.175.000 SEK
Giltighet	Till och med 31/1-2016

Villkor: Detta erbjudande gäller för Dell hårdvara finansierat över 3 år på en finansiell lease. Det är tillgängligt för kommersiella kunder i Sverige. Leasing och finansiering tillhandahålls av Dell Bank International Limited, verksamma under namnet Dell Financial Services (DFS), adress Innovation House, Cherrywood Science & Technology Park, Cherrywood, Dublin 18, Irland och regleras av Irlands centralbank. Detta erbjudande kan komma att ändras utan föregående meddelande och är föremål för produkttillgänglighet, kredit godkännande, utförande av handlingar som tillhandahålls och godtas av DFS och en minsta transaktionsstorlek på 85.000 SEK. Frakt kan tillkomma och utrustningen måste vara försäkrad. Dell och DELL-logotypen är varumärken som tillhör Dell Inc.

Utrustning	• Dell 13G servrar med tillhörande service & mjukvara (upp till 20%)
Tillgängligt	• Kommersiella kunder i Sverige
Erbjudande & villkor	• Finansiell lease med 0% ränta från Dell Financial Services under 36 månader med betalning kvartalsvis i förskott
Belopp	• 85.000 -1.175.000 SEK
Giltighet	• Till och med 31:e januari 2016

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You're at the intersection of **traditional & new technology**