Industry Trends – Trends, AI & Digital
David Windsor & Mike Jackson – Q2 2024

No shortage of trends

HW & Application	Digital tech	End-user	Ecosystem
Gen AI / ML	Optimization of Cloud	Are we returning to work?	VMWare
Edge	No-Touch Orchestration	Limited IT staff	Dell Native Edge
POE & GB Network Switches	Cyber-security	Looking for alternatives & efficiencies	MSP platforms

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Generative AI

AWS and NVIDIA extend their collaboration to advance generative AI
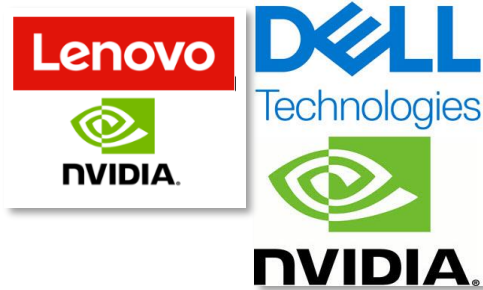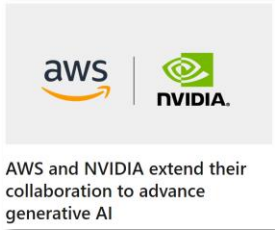
## Application requirements:

Rack PDU
- 45kW
- 66kW
- 100kW?

Racks & Thermal
- 5000 lbs static / 3500 lbs dynamic
- 1500mm deep
- Mount Rack PDU + Cooling Manifold
- CDUs & Rear Door HX

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Eaton Reference Architectures

NEW! SmartRack Self-Cooling Modular Data Centers.

- Easily deployable for large training model solutions (Reference architectures avail)
- Efficient and cost-effective alternative to rear door heat exchangers

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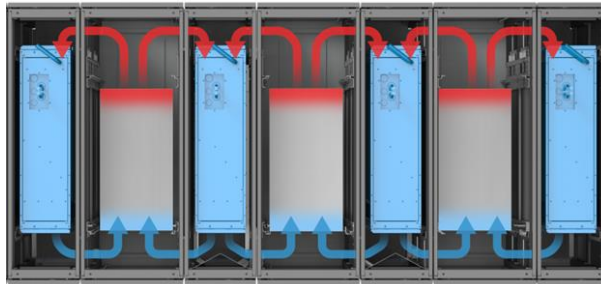
Eaton's Gen AI capabilities for partners

Hardware platforms

- **Racks** – More robust, deeper racks for purpose-built AI loads
- **PDUs** – Larger, denser, PDUs
- **Cooling** – Novel, deployable containment
- **Power** – Energy storage to mitigate volatile power consumption

Support

- **Engineered Capabilities** – Scalable platforms and eng. resources
- **People** – Application resources to help navigate unknowns

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Pressure at the edge

Trends

- GB speed switches
- POE approaching 95W per port
- Switch stacks (ex: Cisco Meraki)

Impacts

- Power in the rack
- Heat in the rack
- Plugs and outlets

Growth

- **5-6kW UPS in IDF (8% growth)**
- High density & switched outlet rack UPS
- Edge cooling & containment

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Cooling for Edge compute

3.5kW ⟩ 5kW ⟩ 12kW ⟩ 25kW

2kW MDC
SRCOOL7KRM

3.5kW MDC
SRCOOL3KTP25U
SRCOOL3KTP33U

July'2024

5.5kW MDC
SRCOOL5KWRM42U

12kW MDC & In-Row
SRP-R-C12
SRCOOLDXRW12

25kW MDC & In-Row
SRP-R-C25
SRCOOLDXRW25

Network Closets	Server Rooms	AI/ML

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Digital

Who is leading the next standard?

Dell's NativeEdge Platform
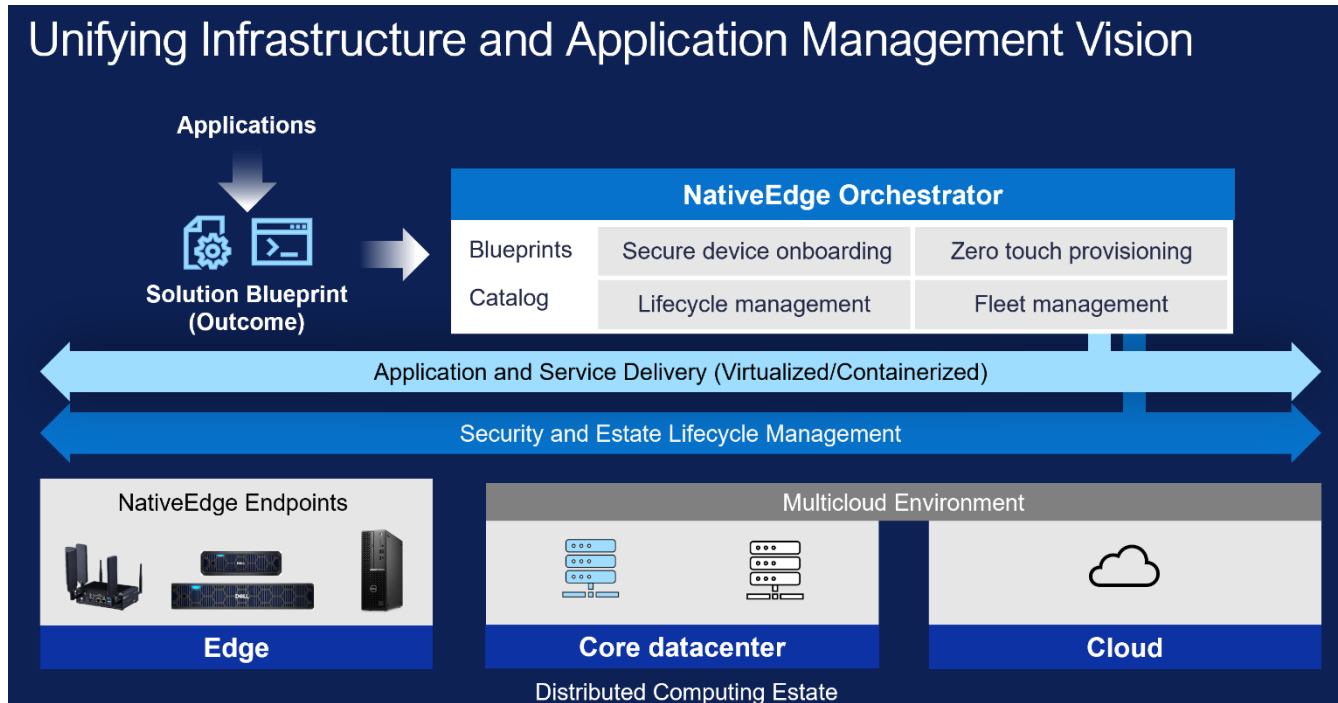
Not every application needs a hammer

Specific profiles demand specific solutions

End-user profiles we serve:

Novice / Home-Labber	Lonely IT Pro	Network Support Team	Enterprise Czar	DIY / Bootstrapper

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Specific profiles demand specific solutions

Customer

- Novice / Home Labber
- Lonely IT Pro
- Network Support Team
- Enterprise Czar
- Bootstrapper / Hacker

Needs

- **Alarm notification / 7x24 monitoring**
- **Aggregate / consolidate alarms**
- **Graceful shutdown / system automation**
- **Remote control / automation**
- **Asset management**

Solutions

- **USB Cable**
- **Network card**
- **APIs and integration**
- **On-premise software**
  - DITPM
  - *IPM*
  - *PowerAlert*
- **Remote monitoring**
  - Cloud dashboard
  - 7x24 monitoring

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Brightlayer Data Centers suite

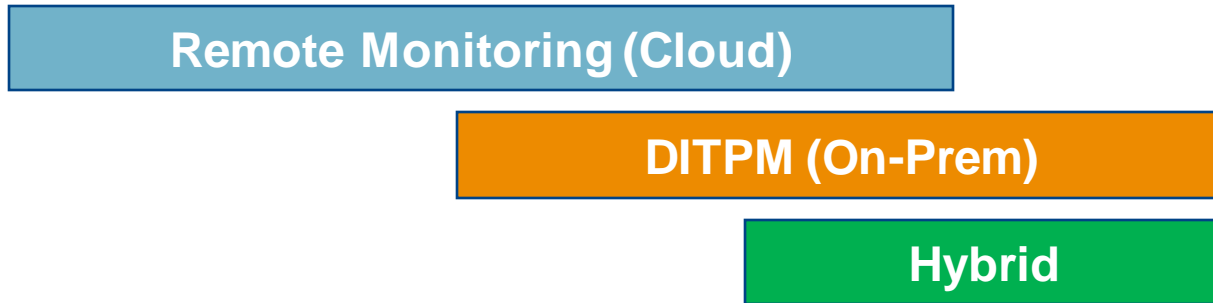| Cloud	On-Prem	Hybrid

• Remote Monitor
    • Essential
    • Advanced
    • Premium
	• DITPM – UPS & PDU
	• DCIM – Datacenter
	• EPMS – Full power chain
	• *IPM & PowerAlert*
		• Proven deployments leveraging DITPM on-premise with 7x24 remote monitoring services

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Specific profiles demand specific solutions

End-user profiles we serve:

Novice / Home-Labber	Lonely IT Pro	Network Support Team	Enterprise Czar	DIY / Bootstrapper

Platform Positioning:

Remote Monitoring (Cloud)

DITPM (On-Prem)

Hybrid

Takeaways we see in Eaton's digital capabilities

Flexibility

is essential

Speed

is king

Trust

no one

Cloud	Automation	Zero trust architecture
On-Prem	Integration	Secure by design (UL2900-1)
Hybrid	Lifecycle mgm't	Authentication

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Cloud-connected UPS

Cloud-connected UPS

Digital Scalability

Eaton-hosted monitoring
- Cloud deployment for fleets
- Efficient setup, deployment and management

Outlet control
- Power cycle outlet groups remotely
- Prevent manual intervention and dispatching personnel

Resilient Hardware

Lithium-ion options
- 8-10 year battery life
- Set-it-and-forget-it

Ruggedized options
- Conformal coating
- High-temp operation

Flexibility

(17) Different models
- Entry-level focused
- Price-point sensitive

Any space, anywhere
- Tower, Rack/Tower
- VESA-mount, zip-tie capable

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Cloud-connected UPS

Family					
Technology	Standby	Standby with Pure Sinewave	AVR R/T	AVR	AVR with Pure Sinewave
Size (VA / W)	• 350 / 210 • 600 / 300 • 850 / 450	• 500 / 400 • 1000 / 750 • 1500 / 1050	• 750 / 475 • 1000 / 750 • 1500 / 1050	• 750 / 475 • 1000 / 750 • 1500 / 1050	• 350 / 210 • 600 / 300 • 850 / 450
Special	• Conf coat on 600 & 850 • Cld/Non-Cld	1U RM	• 2U R/T • 3 load seg	Tower	Tower (2U RM opt)
Battery	Lead Acid	Li-Ion (LFP)	Lead Acid	Lead Acid	Lead Acid

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Remote Monitoring (RM) roadmap

RM 2.0 launch (May)

- Supports new UPS line with cloud connectivity from the factory

RM 2.1 launch (July)

- **RM Essential** Compatibility with Eaton Network card 1PH
- **RM ADVANCED** release for multi-tenancy, tiered user privilege, Hierarchical tree view
- **RM PREMIUM** for Eaton remote monitoring services
- PredictPulse + RIM parity

DITPM (DCPM, EPMS) Roadmap

BLSS 7.1: Q1-2024

- Customer migration with land and expand
- Primary virtualization partner coverage (vSphere 8, Nutanix AHV 6.5)
- "See it your way" UI flexibility

BLSS 7.2: Q2-2024

- License & Entitle mgmt. (automated license delivery)
- Hybrid cloud offer (remote services)
- Virtual Storage (vSAN automation)

BLSS 7.3: early Q4-2024

- Suite level D-IT monitoring/automation
- Full mass firmware & configuration for TL and M3
- EPMS Adv. Tier (complete 260913 compliance)

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Speed is king

Automation	Integration	Lifecycle mgm't
• Zero Touch provisioning • Mass config files • OOB support	• REST API • MQTT	• Firmware signature • Remote UPS FW upgrade • Account expiration

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VMWare

"A bag over VMWare's head? Sad"

Impact of VM
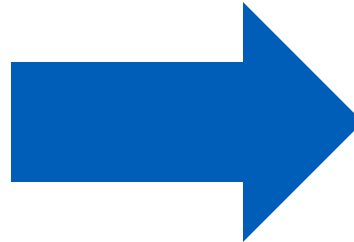
Zero touch provisioning (ZTP)

Configuration and deployment will never be the same:

Manually configure each unit one at a time.

ZTP

Automatically configure every unit at once.

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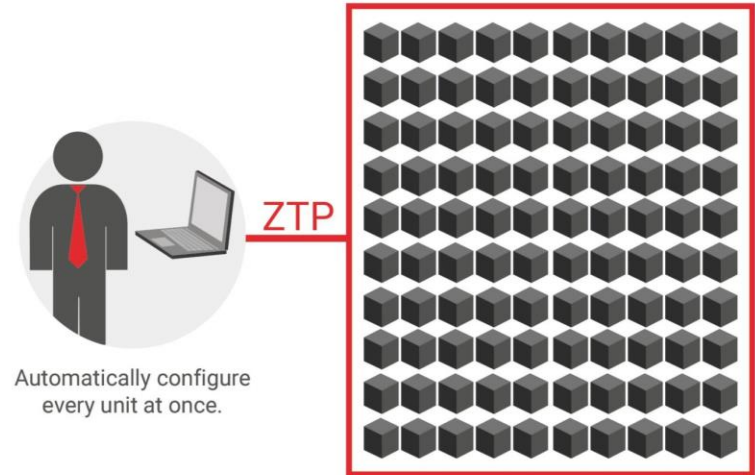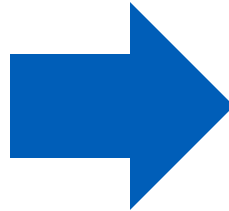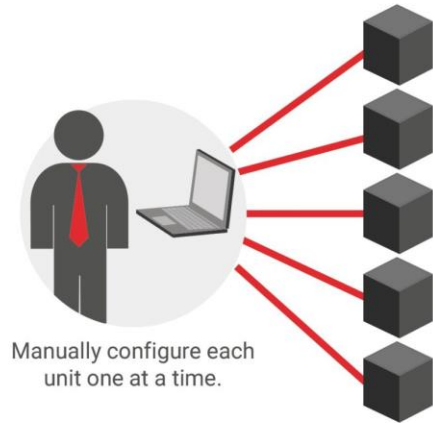
ZTP – Educate your customers
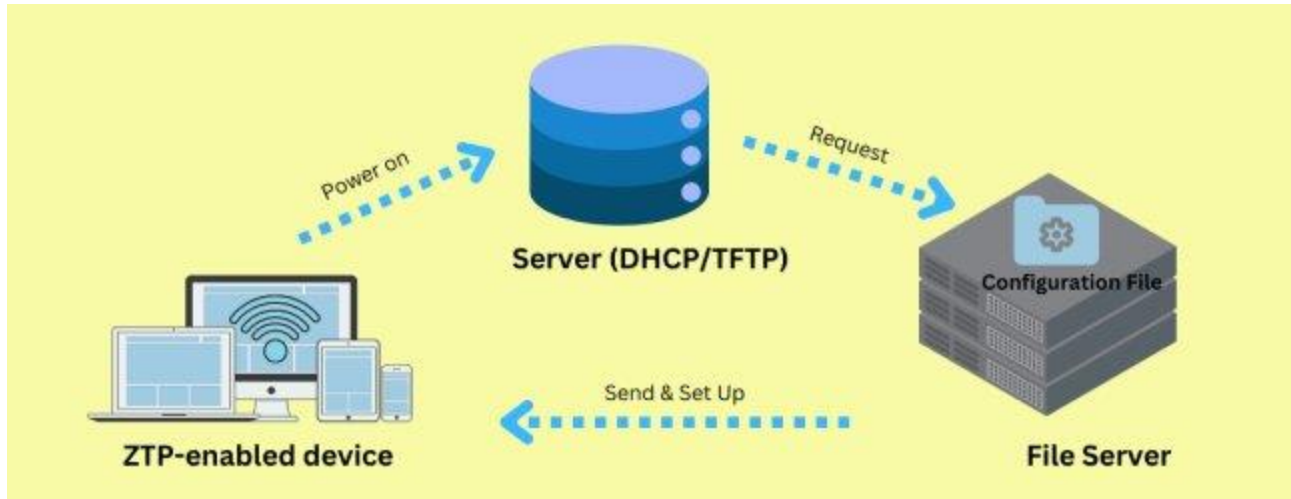
ZTP – Available now!

Efficiency
- Save time and increase productivity
- Prevent human errors

Security
- Enforce a consistent security policy
- Common user experience

Scale
- Works at any scale
- Utilize common IT tools and services

NETWORK-M3

PDU G4

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Trust no one

Zero trust architecture

- Hardware root of trust
- Secure boot
- Chain of trust
- User configurable firewall

Secure by design

- UL 2900-1
- Supply chain security
- Firmware signature
- Latest encryption
- Secure by default

Lifecycle mgm't

- Remote UPS FW upgrade
- Account expiration
- Budgetary planning tools are automated

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Continue your education

GIGABIT NETWORK CARD PAGE

NETWORK-M3 BROCHURE

NETWORK-M2 EOL PAGE

UPS CONNECTIVITY CARDS BROCHURE

APPLICATION NOTE: PKI AUTOMATION WITH CERTBOT EATON CONNECTIVITY DEVICES

CYBERSECURITY SOLUTIONS BRIEF

UPS NETWORK MANAGEMENT COMPATIBILITY CHART

RANSOMWARE EATON.COM PAGE

RANSOMWARE WHITEPAPER

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