PowerEdge MX Multi-Generational Assurance

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SUMMARY

This paper outlines our innovative design features within the PowerEdge MX architecture that ensure longevity of deployment.
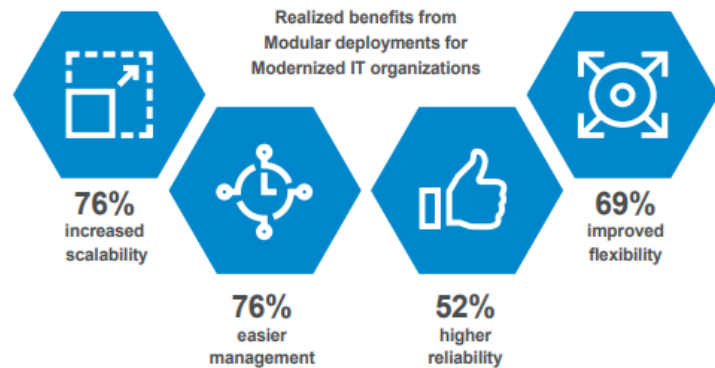
The Multi Generation Assurance outlines that we will be releasing at a minimum 3 generations of compute node components to be integrated into the PowerEdge MX7000 chassis.

Current component trends coupled with unique capabilities of the modular architectures mean that customers can plan and accommodate the unprecedented levels of change required for any organization to remain competitive.

Modular Infrastructure Return on Investment

Today, IT is increasingly seen as a center of influence, helping advise and guide technology consumption across the organization. Technical disruption is being brought about by a massive digital transformation. The accelerating adoption of new technologies is bringing about great disruption to existing markets and business models. This digital transformation is creating new, larger opportunities in virtually every industry. Managed well, it can become a competitive advantage for any industry.

Realized benefits from Modular deployments for Modernized IT organizations

76% increased scalability

76% easier management

52% higher reliability

69% improved flexibility

To take full advantage of IT Transformation, IT capabilities need to keep pace, adapt and transform. This means a shift from a static and inflexible infrastructure to one that is more dynamic and automated, that fosters innovation while maximizing return on investment.

The PowerEdge MX7000 chassis and PowerEdge MX-series portfolio, part of the 14G server line, have the same foundational elements and benefits of the 14G portfolio and additionally provide:

• Traditional advantages of modular design including a single management console for all components and multiple chassis, cable aggregation and density

• New disaggregated architecture that allows customers to allocate on-demand ratios of shared pools of compute, storage, and fabric as needed

Having an architecture with the ability to be as dynamic and innovative as businesses demand allows customers to achieve optimal utilization and flexibility, drive maximum productivity and availability, and deliver superior ROI and greater financial results.

The PowerEdge MX7000 chassis has been designed to accommodate at a minimum 3 server generations and corresponding processor deployments, if not more, so the investment is protected well into the future.

DELLEMC

For the first generation of PowerEdge MX the chassis includes full feature 2-socket or 4-socket servers with the Intel® Xeon® Processor Scalable family (Skylake-EP) and up to 24 or 48 DIMMs, 12 Gb/s SAS storage sleds, and a choice of networking switch IO modules (IOM).

The PowerEdge MX7000 and its MX-series compute, storage and networking components can offer a flexible architecture to deploy traditional workloads and emerging workloads within the single managed architecture.

Designed with Longevity in Mind

From the? initial concept design of the PowerEdge MX Chassis this digital transformation from traditional workloads and datacenter requirements to a modernized architecture were key considerations. The predecessor PowerEdge M1000e has been in production over 10 years and encompassed 5 generations of compute. During that time period we have garnished substantial feedback from customers to develop the next generation of modular infrastructure that will last well into the next decade.

Historically we have seen CPU Thermal Design Power (TDP) on the rise, from 60W TDP to up to 205W TDP today. The next generations in Intel CPU architectures will required an architecture that can efficiently cool higher TDPs well beyond today.. Larger heat sync, airflow, and power draw could drastically impact the overall architecture when developing dense solutions. Customers have indicated that a critical component is an ability to leverage the investment well beyond a single requirement and be scoped for this growth and offer specific benefits for their VM farm or software defined solutions.

Figure: PowerEdge MX No Midplane Design

With any architecture that integrates a midplane there are often limitations to bandwidth, or throughput which might require a midplane replacement to accommodate new requirements years beyond initial deployment. The PowerEdge MX has been designed with two fully redundant fabrics (A and B) to ensure customers have an optimal return on investment with least impact to their organization. In the PowerEdge MX *No Midplane design* Fab A/B mezzanine card connectors dock directly with IOM connectors through the assistance of mechanical guide pins. This means zero throughput limitations, providing high-speed technology connections now and well into the future without any type of midplane upgrade. Again, there is no midplane.
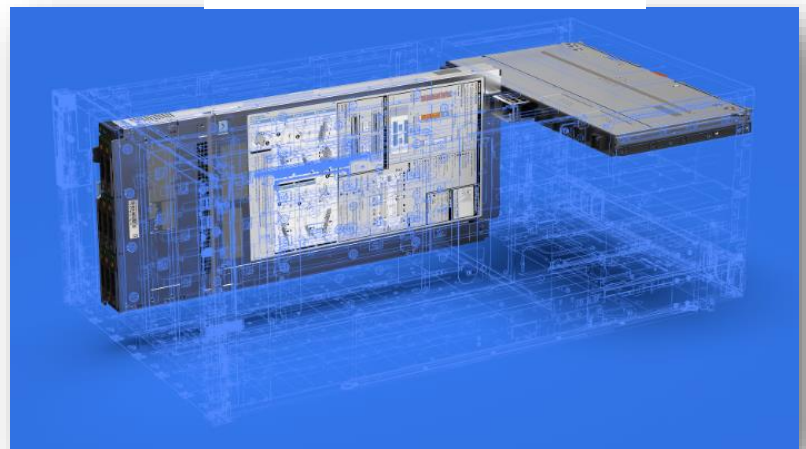
Conclusion

Today our advanced engineering organization is working closely with component manufacturers in the industry to ensure that we can accommodate not only todays best of breed requirements but be scoped for technology developments like Gen-Z or true composability. By defining and planning now for the three generations of compute nodes into the PowerEdge MX7000 chassis we are articulating the true impact and considerations for our customers to deliver the greatest return on investment in the modular datacenter space.