



Flash Memory Summit

Empowering the Gen-4 Storage Transition

August 8, 2019

Andrew Dieckmann, VP Marketing, Data Center Solutions
Microsemi (a Microchip Company)



Agenda



Who are
we?

Market
Trends

Innovation

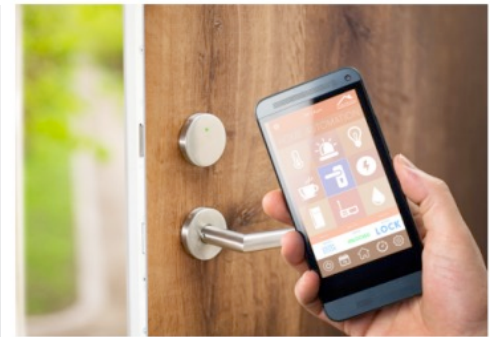


Who is Microchip?



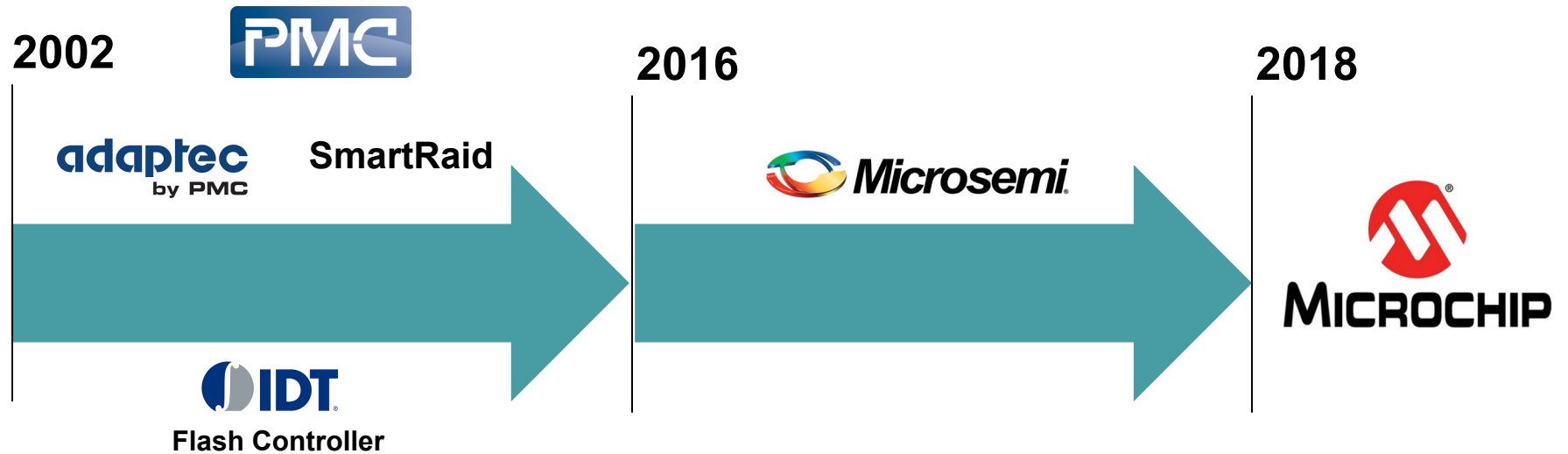
Microchip Technology Inc.

- Headquartered in Chandler, Arizona
- ~19,000 Employees
- ~\$6B Annual Revenue
- Market Verticals:
 - Data Center
 - Automotive
 - Industrial / Medical
 - Aerospace & Defense
 - Communications
 - Consumer



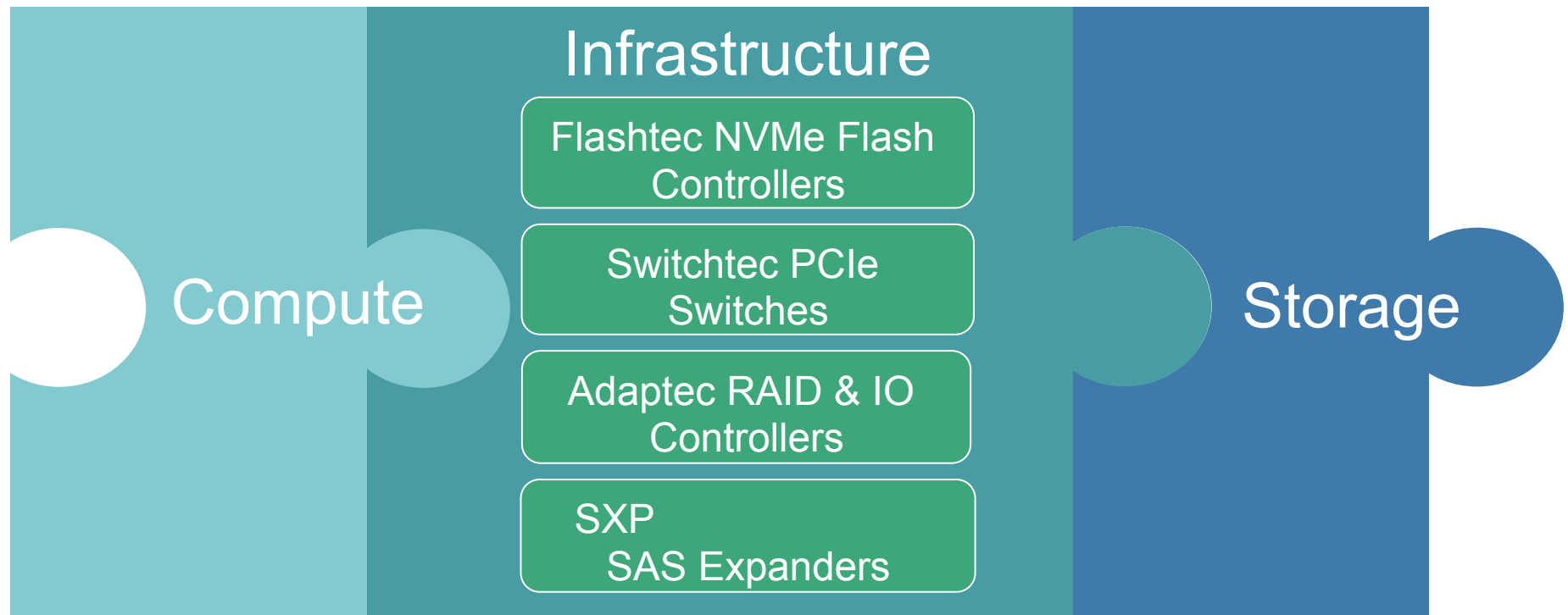


Data Center Solutions Division Heritage



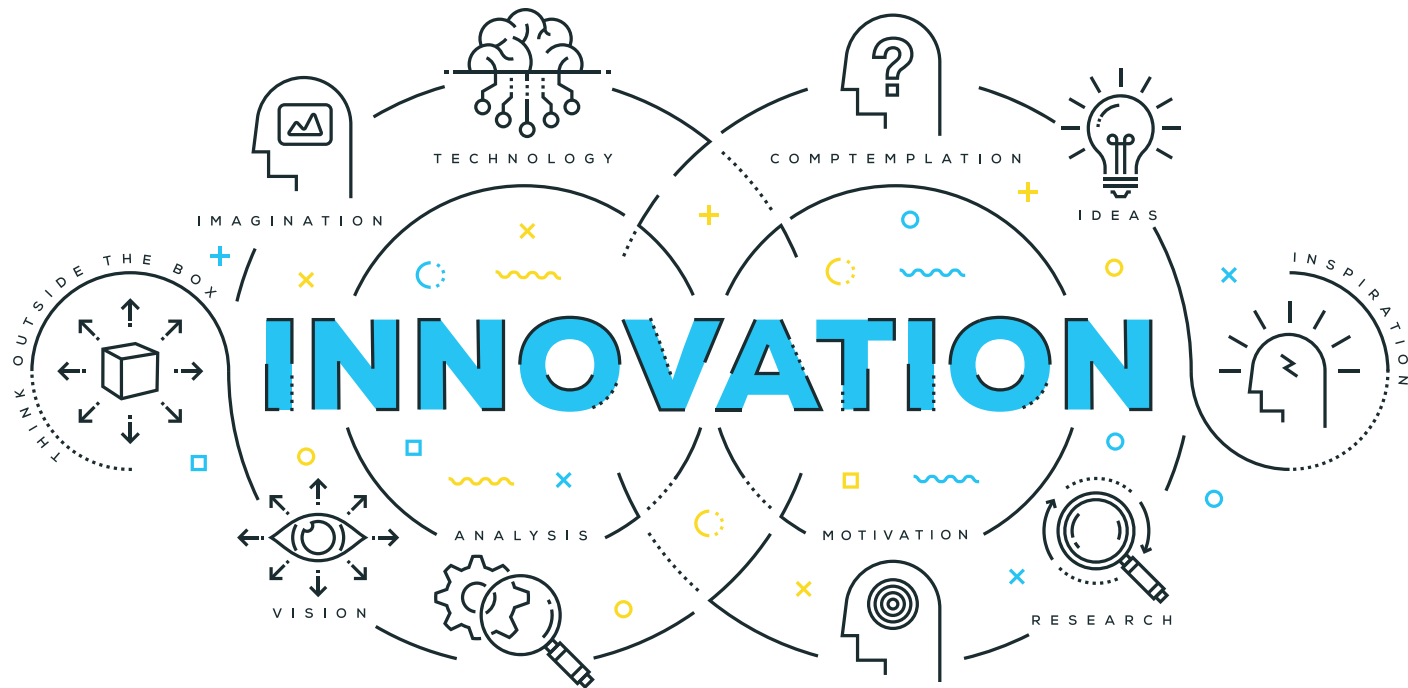


Microsemi Data Center Solutions Division





Change and Innovation in Storage Continues to Accelerate





PCIe Gen 4 Will Be Widely Deployed in CY2020





Diverse Set of Media, Form Factors and Interfaces to Manage





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SSDs are Getting Very Large



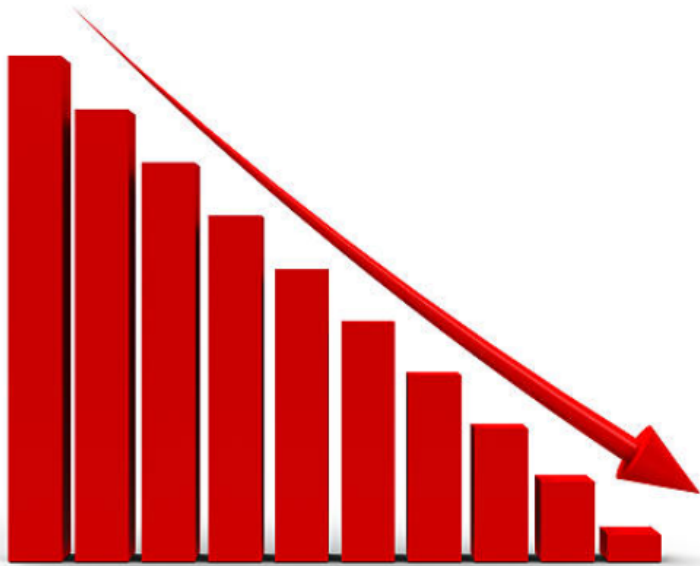


.. and Application Needs are Diverse





Innovation in Storage Media is Driving Latencies Lower.. But Each Tier is More Costly





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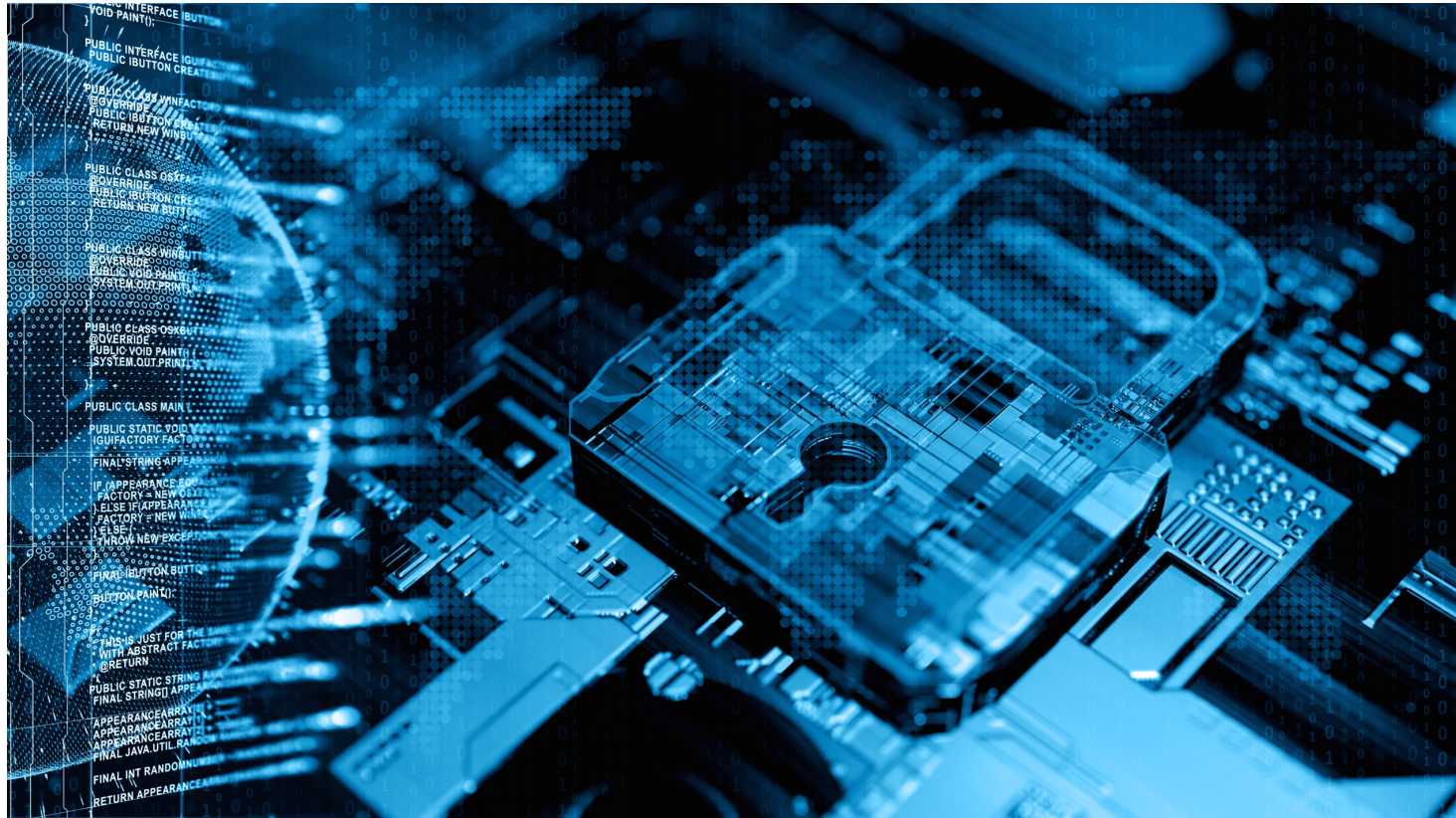
GPU Use Cases are Proliferating





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Security Requirements are Increasing



Innovation is Required To Meet New Challenges

Performance



Flexibility



Security





Innovation is Required To Meet New Challenges

Performance





A Low Latency End-to-End PCIe Gen 4 Storage Subsystem

PCIe Gen 4 NVMe SSD

PCIe Gen 4 Programmable PCIe Switch

Low Latency

8GB/s Bandwidth

>2M IOPs



Low Latency

Enterprise Class
Reliability

Power Optimized

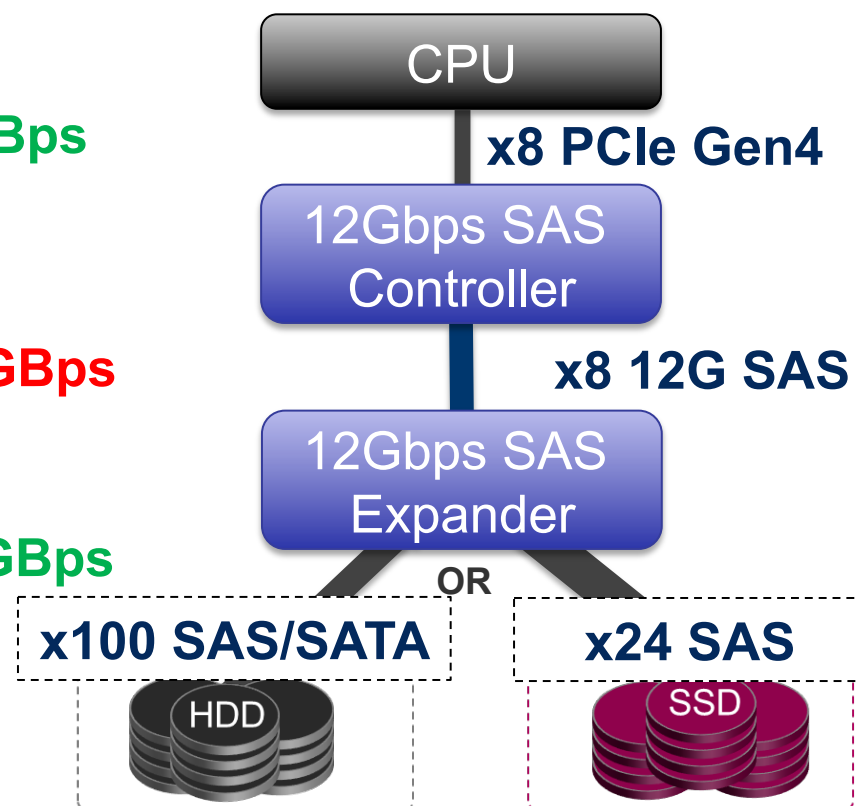
Enabling a Variety of Media to Take Advantage of PCIe Gen 4 Bandwidth



16 GBps

9.6 GBps

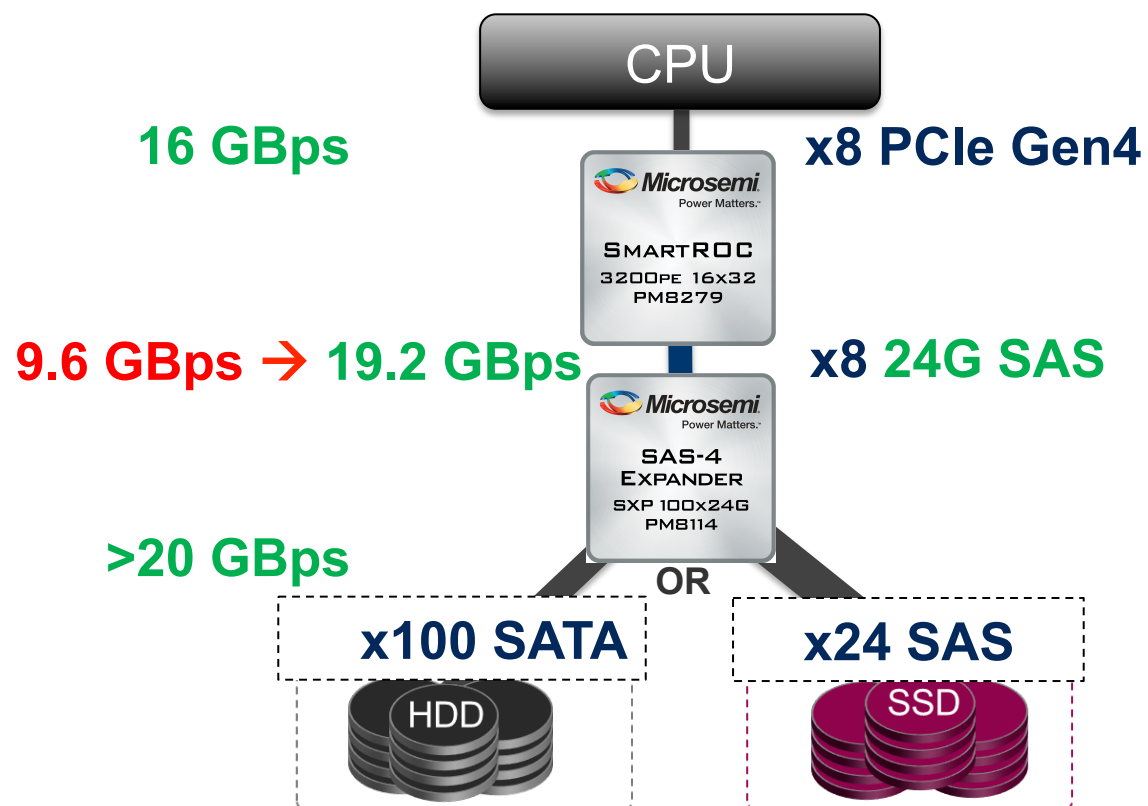
>20 GBps





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24G SAS as a Backbone of the PCIe Gen 4 Data Center

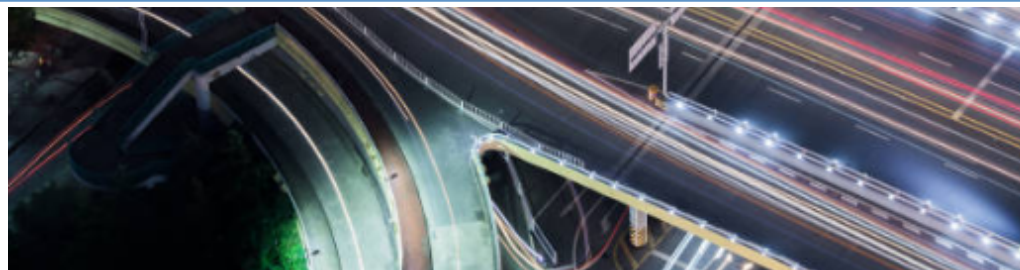




24G SAS Delivers Full B/W to PCIe Gen 4 Systems with Lower Speed Drives



Dynamic Channel Multiplexing





Innovation is Required To Meet New Challenges

Flexibility





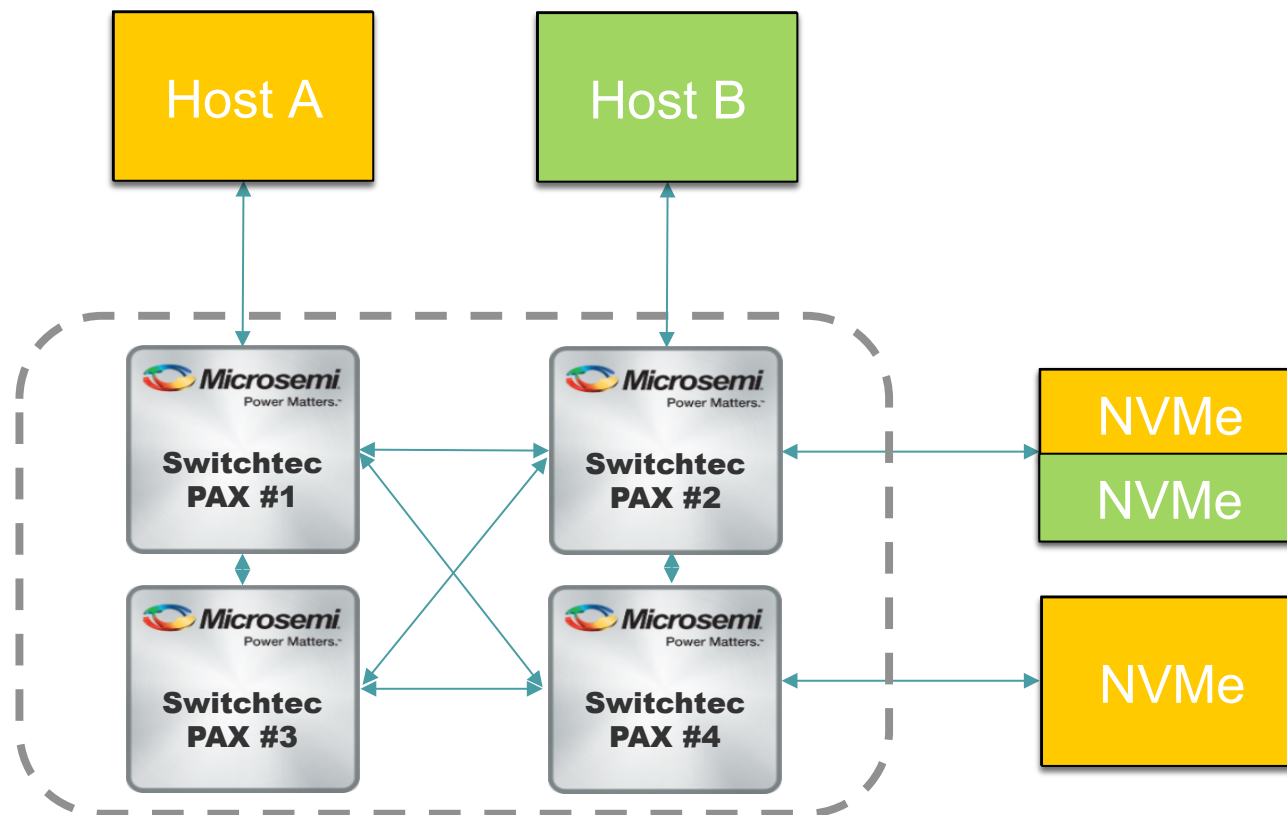
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PCIe Fabrics and Composability

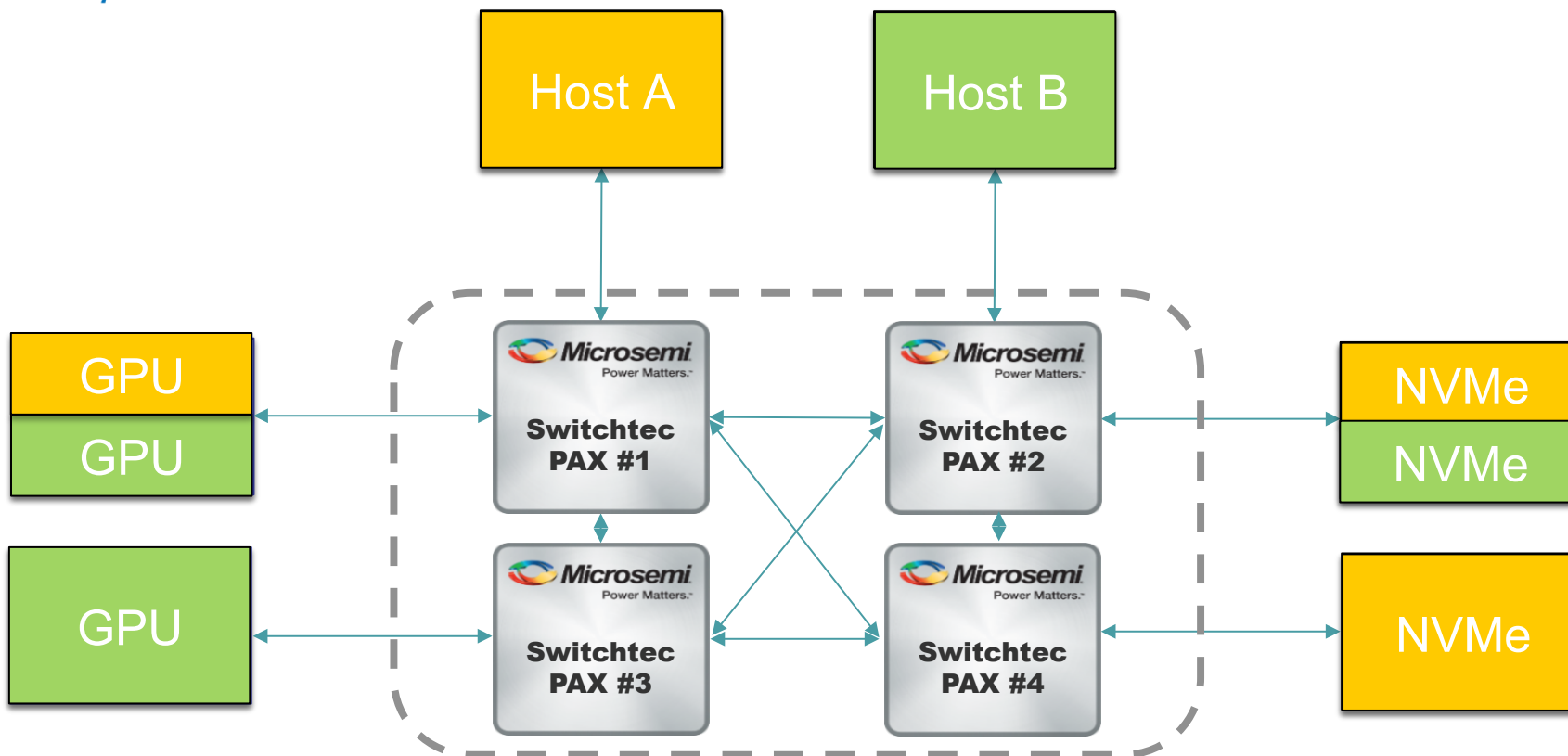
Dynamic Resource Allocation

Resource Sharing with Standard Device Drivers

Lowest Latency Fabric to Enable Performance SSDs



PCIe Fabrics and Composability





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Rich Data Services for All Media Types

Uncompromised NVMe performance

Multi-protocol data protection

Unified Storage Management



Programmable Storage Interconnect

PCIe Gen 4 NVMe

SAS SSD / HDD

SATA SSD / HDD



Flashtec™

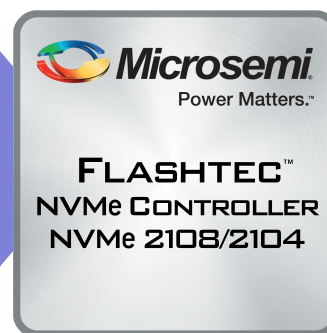
A Fully Programmable Flash Controller

Acceleration of memory technology transitions

Hyperscale optimized SSDs

Computational storage

Feature fast-tracking



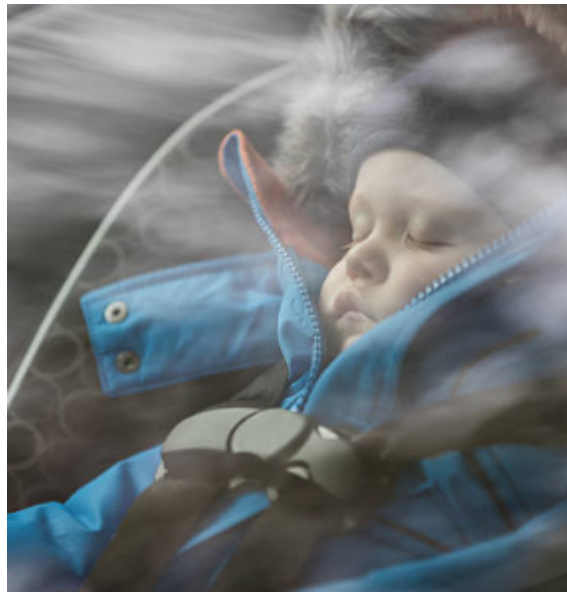
Media Flexibility

Software Defined Flash



Innovation is Required To Meet New Challenges

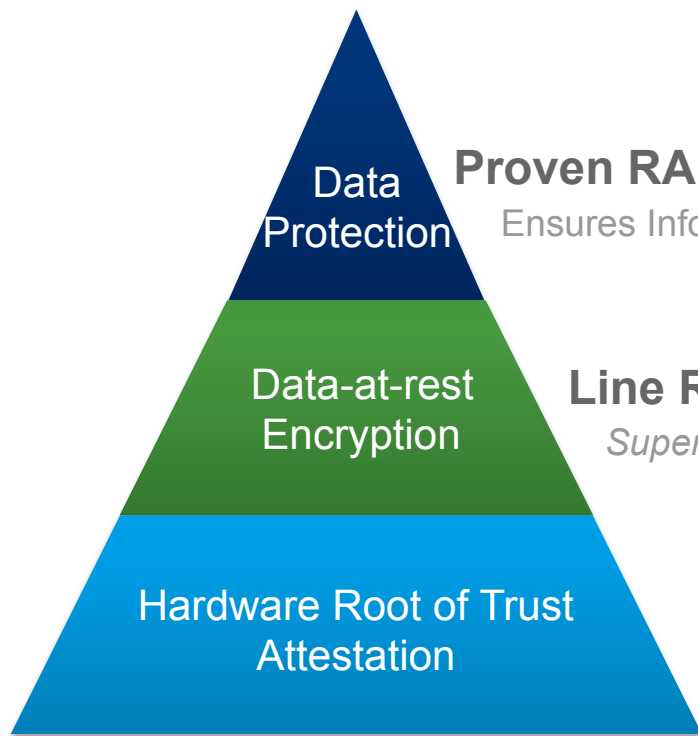
Security





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The Trusted Data Center



Data Protection

Proven RAID Stack

Ensures Information Integrity and Performance

Data-at-rest Encryption

Line Rate Encryption

Superior Security and Flexibility

Hardware Root of Trust Attestation

Hardware Root of Trust & Attestation

Ensures FW Integrity and Authenticity

Ensures Compliance with Data Center Policy



Creating the World's Most Secure Storage Infrastructure



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2018



a  MICROCHIP company



PRESS RELEASES – FMS 2018



2018

Microsemi Announces Early Adopter Sampling of Industry's Highest Performing Enterprise Gen 4 PCIe Controller

New NVMe 3016 Device Offers the Most Flexible and Programmable Controller for Enterprise and Cloud Workloads

Flash Memory Summit: Aug. 7-9
Santa Clara, California



PRESS RELEASE





2018

Microsemi Announces Availability of Low Latency, Low Power, High Reliability Gen 4 PCIe Switches

New Switchtec PCIe Switches Provide 16 GT/s PCIe Connectivity for Machine Learning, Data Center Servers and Storage Markets

***Flash Memory Summit: Aug. 7-9
Santa Clara, California***



PRESS RELEASE





2018

Microsemi Announces Industry's First Tri-Mode Capable Storage I/O Controllers and RAID-on-Chip Controllers Supporting PCIe Gen 4 and 24G SAS

New 16 Nanometer Controllers Will Enable Storage Infrastructure for the PCIe Gen 4 Data Center

***Flash Memory Summit: Aug. 7-9
Santa Clara, California***



PRESS RELEASE





2018

Microsemi Announces Industry's First 24G SAS Expanders for Data Center Storage

New Family Addresses High Bandwidth Storage Needs to Unlock Full Performance Capabilities of PCIe Gen 4-Capable Systems

Flash Memory Summit: Aug. 7-9
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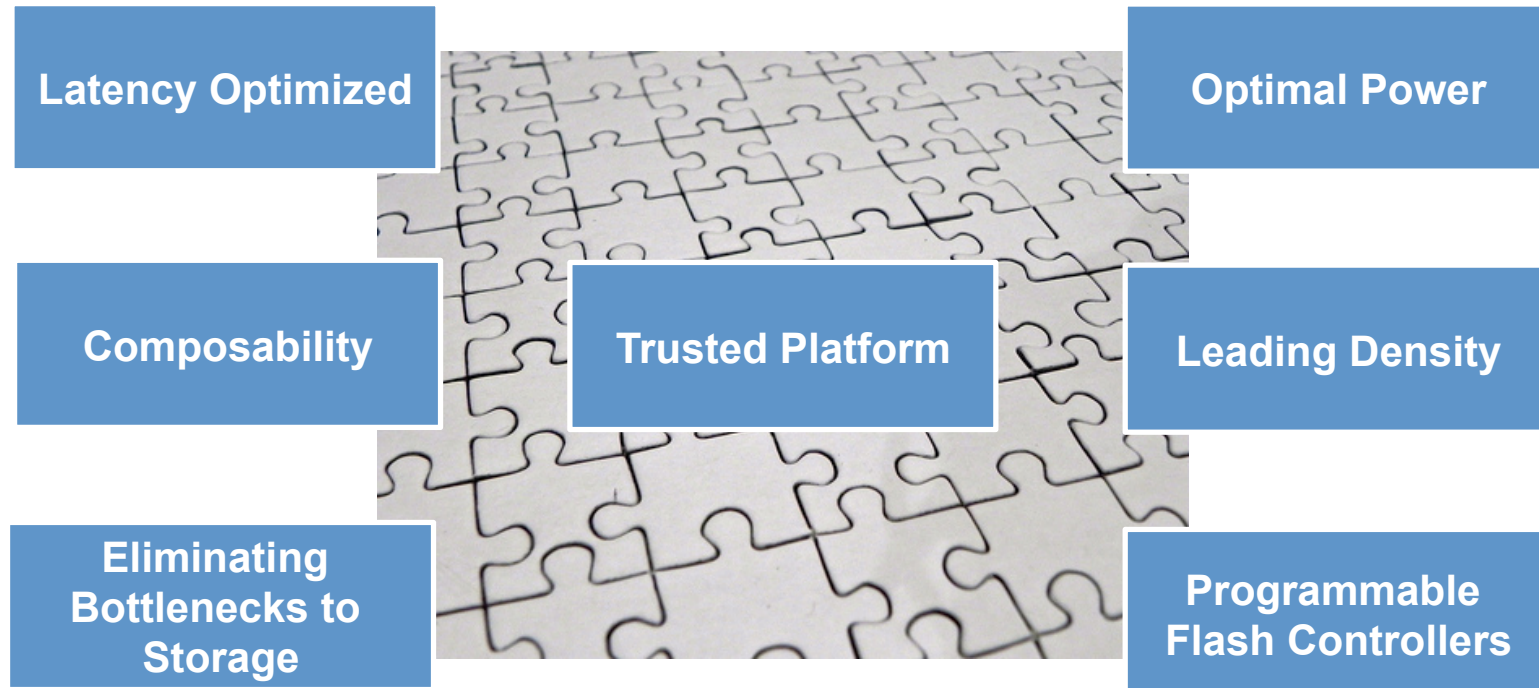


PRESS RELEASE





Microsemi is Empowering Gen 4 Storage





Visit us at **Booth #213**
to Experience How Microsemi is
Empowering the Gen 4 Transition



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