OPEN
Compute Project
OCP U.S. SUMMIT 2017
Santa Clara, CA

Enabling Cloud Workloads through Innovations in Silicon

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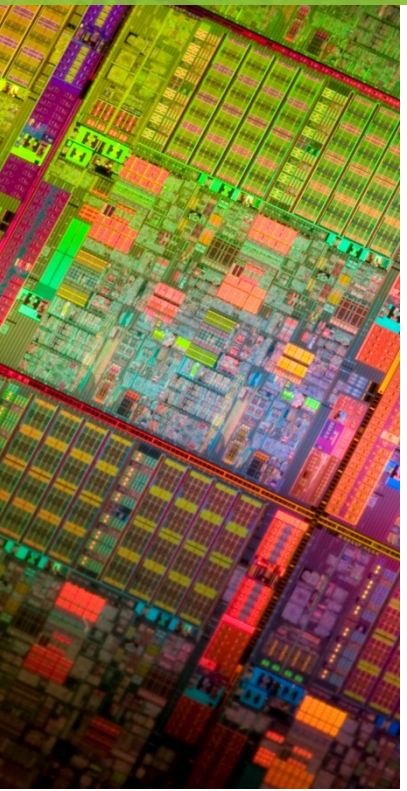
Azure, Microsoft

OPEN HARDWARE. OPEN SOFTWARE. OPEN FUTURE.

OPEN Compute Project



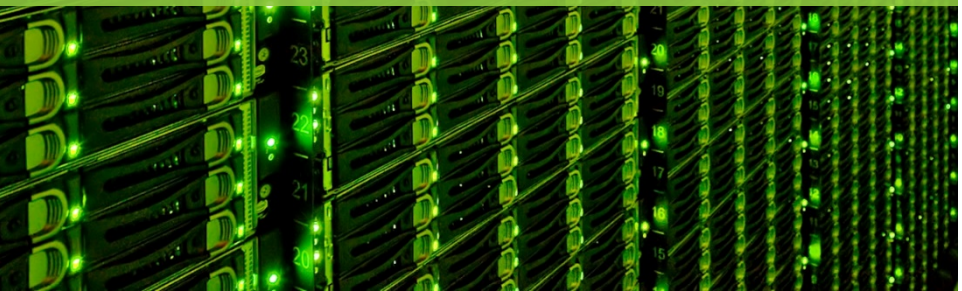
SILICON MANUFACTURING DYNAMICS

Moore’s law and mobile scale are changing silicon manufacturing dynamics

New server silicon providers are emerging with high-performance designs

Cloud scale reduces ISA stickiness

OPTIMIZING ARM64 SERVERS FOR MICROSOFT'S CLOUD SERVICES



Evaluating hardware from multiple ARM64 Server partners (Qualcomm, Cavium, …)

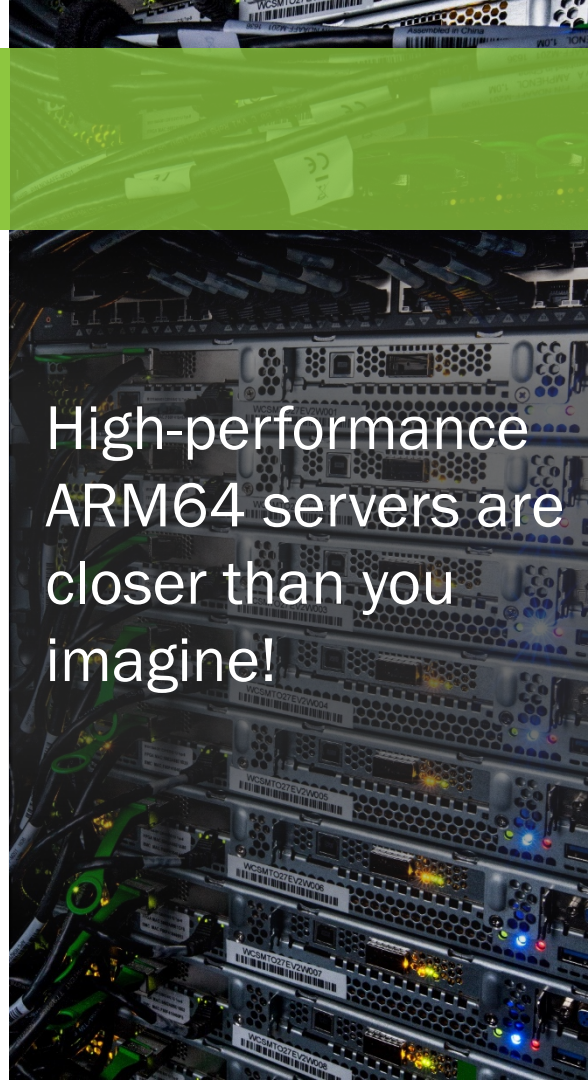
Collaborating on current and future datacenter requirements

Ported Windows Server (Server Core) for our internal use

Collaborating on Olympus compliant ARM64 Server motherboards

WHY ARM64 SERVERS?

- ✓ There is a growing and innovative ARM64 server ecosystem with multiple partners
- ✓ There is an existing software ecosystem and developer base
- ✓ ARM is best positioned to take advantage of future ISA disruptions



WHY NOW? WHAT HAS CHANGED?

Performance and capabilities (TCO) have changed significantly

A lot of code is platform agnostic nowadays because of .NET and Java

10101
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Supporting Microsoft Cloud Services only

WHERE DO WE SEE OPPORTUNITIES FOR ARM64?

Search and Indexing

Machine learning and Big Data

Web Servers

E-mail

ENABLING ARM64 FOR MICROSOFT'S CLOUD

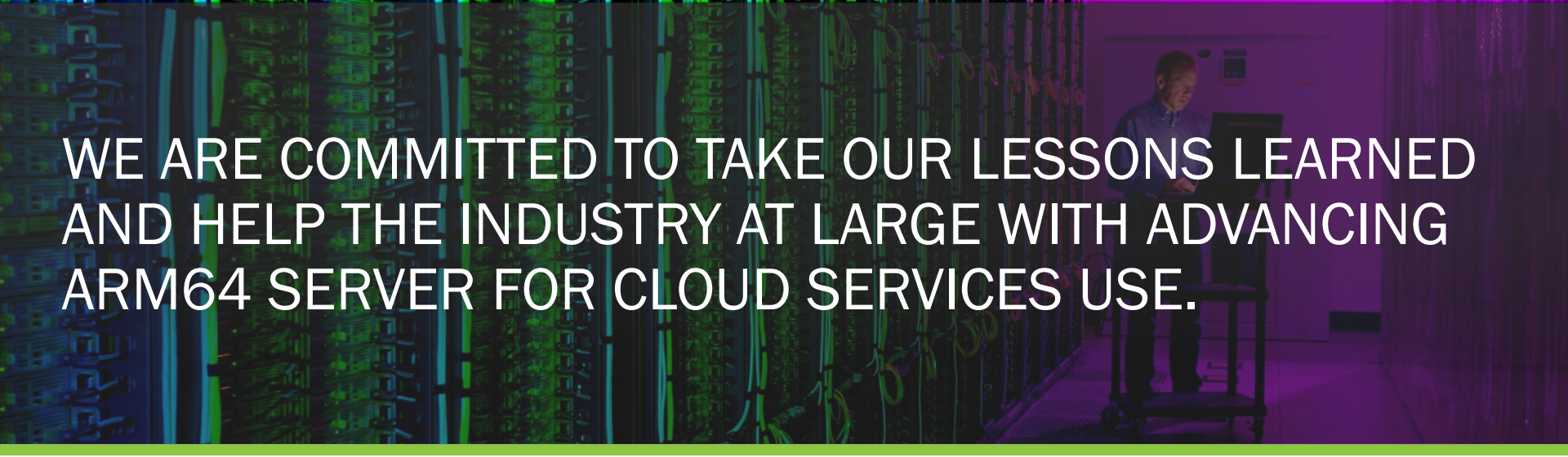
ONLY PORT SOFTWARE COMPONENTS REQUIRED BY THE CLOUD SERVICE

Focused on Microsoft's Cloud Services only

Windows Server (Server Core) and tools for ARM64

Language runtime systems and middleware components

Ported and evaluated internal Cloud Services workloads



WE ARE COMMITTED TO TAKE OUR LESSONS LEARNED AND HELP THE INDUSTRY AT LARGE WITH ADVANCING ARM64 SERVER FOR CLOUD SERVICES USE.

It's all about open standards and partnerships

Platform standardization is critical for ARM64 servers to be successful

At all levels -chassis, hardware, firmware, OSes, and app stacks

ARM CAVIUM Inventec Mellanox TECHNOLOGIES QUALCOMM

Ram Peddibhotla
Qualcomm Datacenter Technologies
VP Product Management

Qualcomm Centriq™ 2400
Open Project Olympus Motherboard

Microsoft Project Olympus Chassis
19” Standard Rack

Check Microsoft Booth

Design through Collaboration

- Deep and multi-faceted collaboration

Unprecedented Leadership

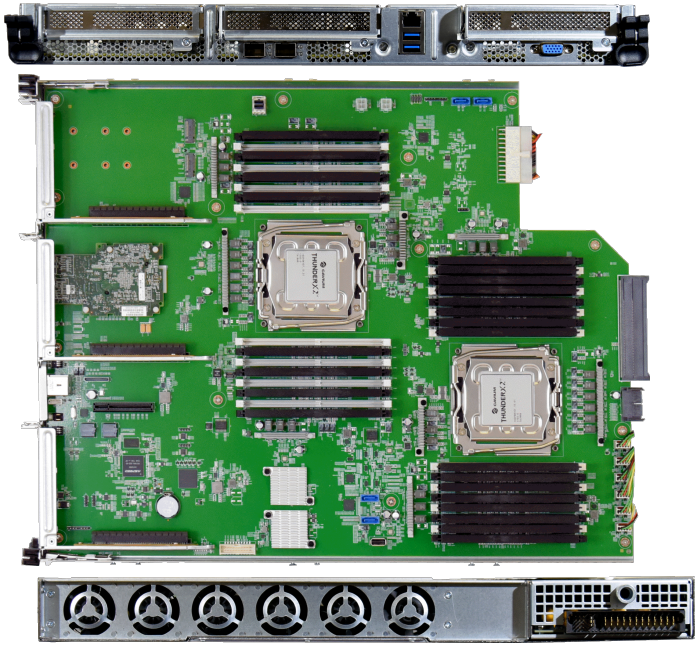
- World’s first demo of 10nm server processor running Windows Server

Accelerating Innovation

- Enabling Microsoft Cloud to benefit from ARM-based compute through OCP

CAVIUM

Syed Ali
CEO



ThunderX2: FIRST Dual socket ARM server with high end x86 class server performance

Extensive collaboration to optimize current & future products for Microsoft Data Centers

Microsoft contributions will accelerate adoption of ARM servers for Hyperscale, HPC and main stream applications

WE ARE EXCITED ABOUT THE OPPORTUNITY ARM64 BRINGS

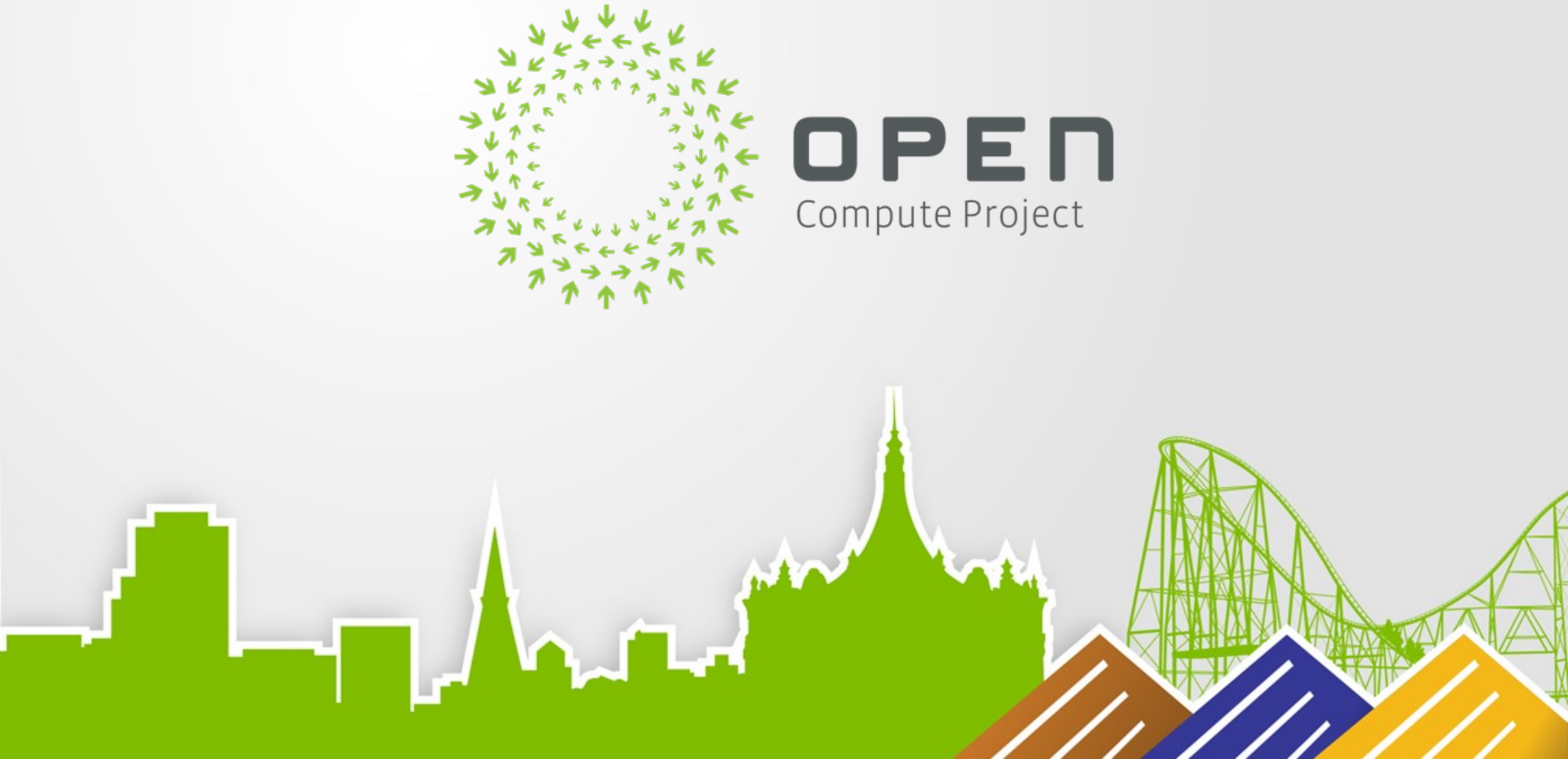
INNOVATION

COLLABORATION

COMMUNITY

RECOMMENDED SESSIONS

Day	Time	Title	Presenter	Session Type
Thurs, March 9th	9:00am	Microsoft Project Olympus Overview	Mark Shaw Siamak Tavallaei	Workshop
Thurs, March 9th	10:00am	Microsoft Project Olympus Servers	Mark A. Shaw	Workshop
Thurs, March 9th	10:30am	SONiC	Xin Liu	Workshop
Thurs, March 9th	11:00am	Microsoft Project Olympus High Density Flash	Mark A. Shaw	Workshop
Thurs, March 9th	11:30am	Microsoft Project Olympus Storage JBOD	Mark Shaw Bruce Hoch	Workshop
Thurs, March 9th	1:00pm	Microsoft Project Olympus GPU Expansion	Siamak Tavallaei	Workshop
Thurs, March 9th	1:00pm	Switch Abstraction Interface - SAI	Xin Liu	Workshop
Thurs, March 9th	1:30pm	Microsoft Project Olympus Rack Management	Badriddine Khessib	Workshop
Thurs, March 9th	2:00pm	Microsoft Project Olympus Node Management	Badriddine Khessib	Workshop
Thurs, March 9th	2:30pm	Power Capping in Project Olympus	Ali Larijani	Workshop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