



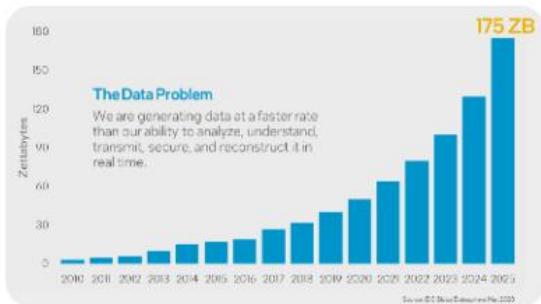
## МЕРЕЖЕВІ АДАПТЕРИ INTEL

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# ТЕНДЕНЦІЇ РИНКУ

## Explosion of Data



## Cloud Native & Microservices



## Evolution of Workloads

Application Centric → Data Centric



## Increased Data Analytics & Data Lakes



## Rise of Edge Computing



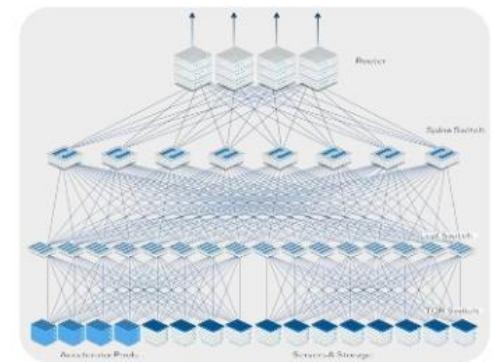
## Rapid Adoption of AI



## Disaggregated Storage & HCI Architectures

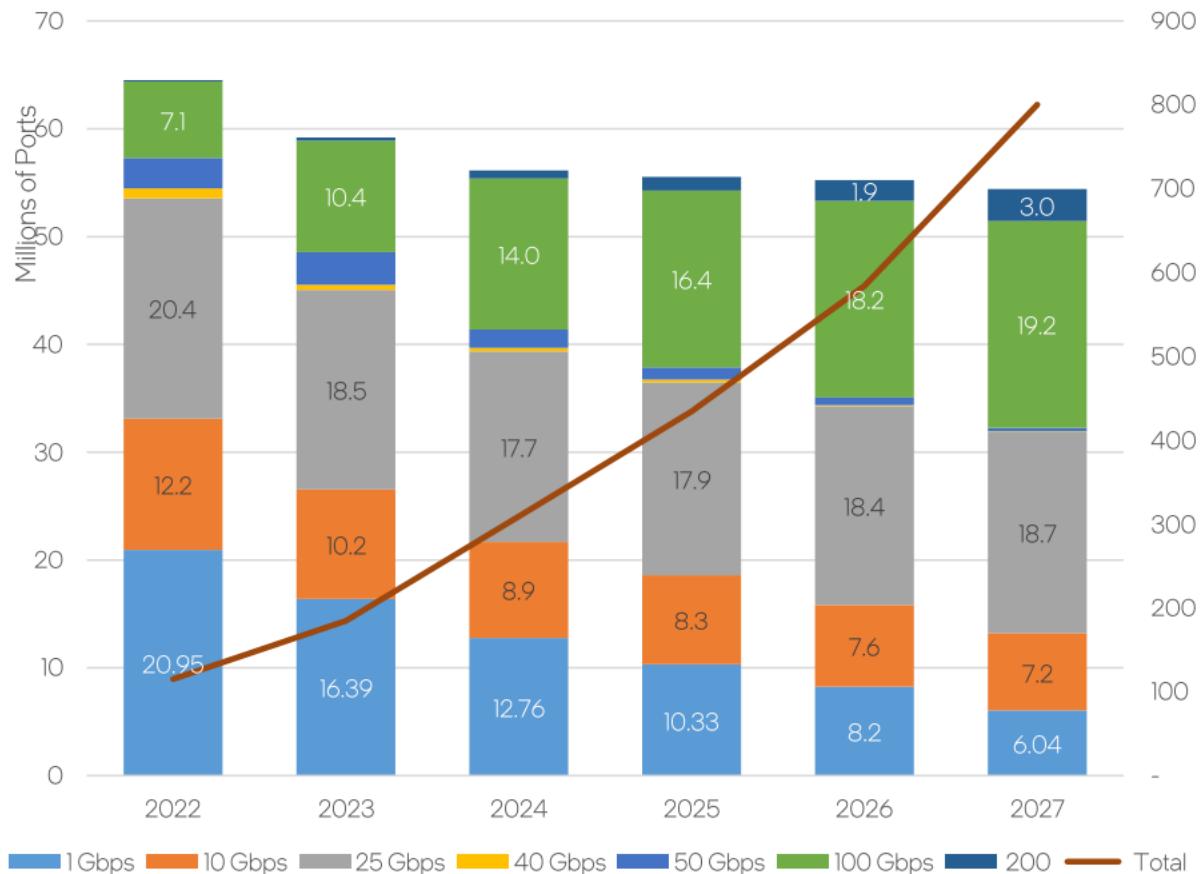


## Increase in East / West Traffic

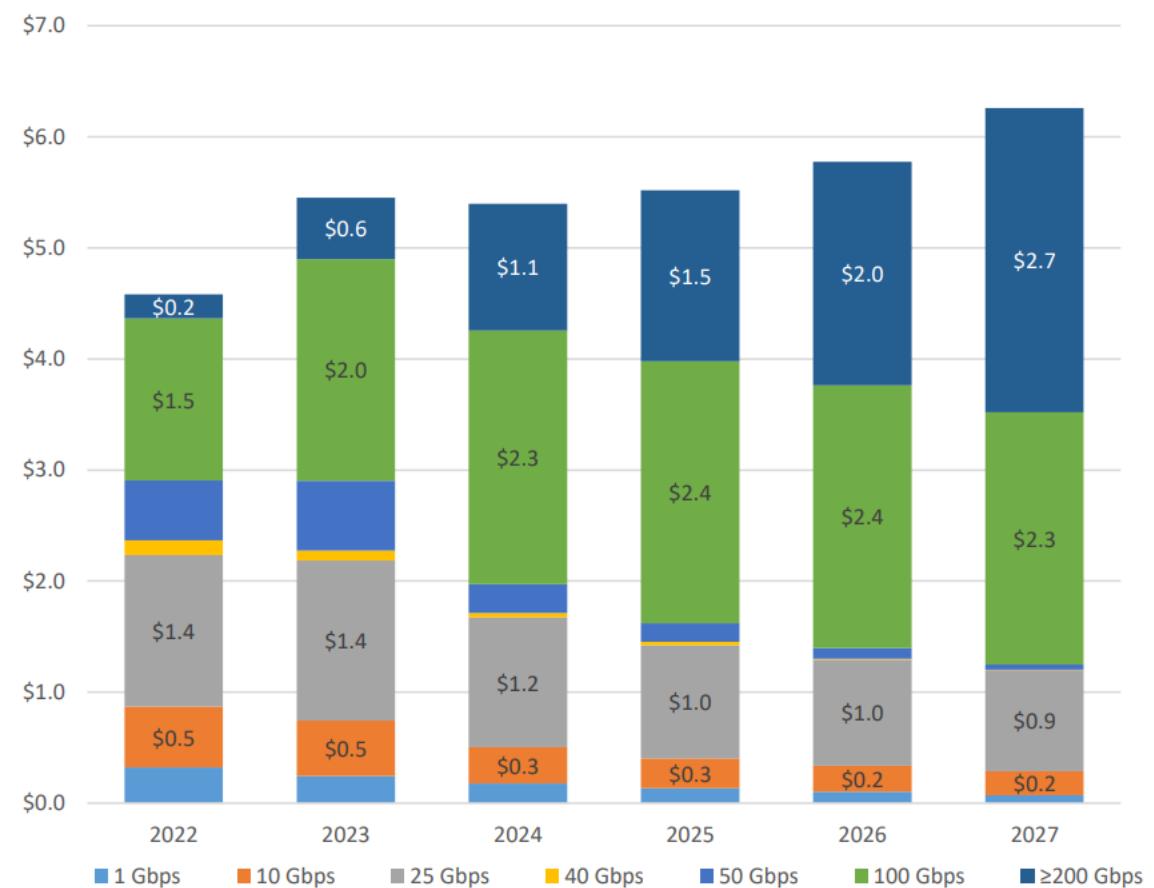


# 25/100GbE ПЕРСПЕКТИВИ ЗРОСТАННЯ

Worldwide Ethernet Ports - Adapters & Controllers



Worldwide Ethernet Ports - Revenue



Джерело: Dell'Oro Group

# ДОРОЖНЯ КАРТА

Left edge = Appr. PQR	Available	2023	2024
200 GbE			E830 (Connorsville)
100 GbE	Intel® Ethernet Controller E810CAM1/CAM2 (Columbiaville)		
40 GbE	Intel® Ethernet Controller XL710 (Fortville)		
25 GbE	Intel® Ethernet Controller E810XXV (Columbiaville) Intel® Ethernet Controller XXV710 (Fortville)		
10 GbE	Intel® Ethernet Controller X710 (Fortville) Intel® Ethernet Controller X550AT (Sageville), Intel® Ethernet Controller X710-TM4, X710-AT2 (Carlsville)		E610 (Linkville) <span style="color: white; background-color: #0072BD;">T</span>
5GbE	Intel® Ethernet Controller V710-AT2 (Carlsville)		
2.5 GbE	Intel® Ethernet Controller I225/I226 – MAC+PHY (Foxville)	<span style="color: white; background-color: #0072BD;">T, R</span>	
1GbE	Intel® Ethernet Controller i350 – MAC+PHY (Powerville) Intel® Ethernet Controller i210AT/IT – MAC+PHY (Springville) Intel® Ethernet Controller i210IS/CS – MAC + Serdes (Springville)	<span style="color: white; background-color: #0072BD;">T</span>	

Життєвий цикл продукту: ID 499897

T Extended temperature support  
R Real Time, available with IEEE® TSN

# ETHERNET АДАПТЕРИ PCIe 1/10G

## Single Port Adapters

Fox Pond (I225-T1)

1x2.5/1GbE



Intel® Ethernet Network Adapter X710-T2L

2x10/5/2.5/1GbE



Intel® Ethernet Converged Network Adapter X550-T2

2x10/5/2.5/1GbE



Intel® Ethernet Network Adapter I210-T1

1x1GbE



Intel® Ethernet Network Adapter X710-T4L

4x10/5/2.5/1GbE



Intel® Ethernet Converged Network Adapter X710-T4

4x10/1GbE



Intel® Ethernet Network Adapter I350-T4

4x1GbE



10GBASE-T  
1GBASE-T  
Max: 10Gb

1GBASE-T  
Max 1Gb

# ETHERNET АДАПТЕРИ PCIe

## Single Port Adapters

## Dual Port Adapters

## Quad Port Adapters

QSFP28  
Max:  
200Gb

Intel Ethernet Network Adapter  
E810-CQDA1  
 $1 \times 100/2 \times 50/4 \times 25/4 \times 10GbE$



Intel Ethernet Network Adapter  
E810-2CQDA2  
 $2 \times 100/2 \times 50/8 \times 25/8 \times 10GbE$ , 200Gbps total bandwidth



QSFP28  
Max: 100Gb

Intel Ethernet Network Adapter  
E810-CQDA2  
 $2 \times 100/2 \times 50/4 \times 25/8 \times 10GbE$



Intel® Ethernet Network Adapter  
E810-CQDA2T  
 $2 \times 100/2 \times 50/4 \times 25/8 \times 10GbE$ , enhanced timing precision



QSFP+  
Max:  
40Gb

### Speed Decoder (Max)

I = 1GbE

X = 10GbE

XXV = 25GbE

XL = 40GbE

L = 50GbE

C = 100GbE

CC = 200GbE

Intel Ethernet Converged Network Adapter  
XL710-QDA2  
 $2 \times 40/4 \times 10GbE$



Intel Ethernet Network Adapter  
XXV710-DA2  
 $2 \times 25/10GbE$



Intel Ethernet Network Adapter  
E810-XXVDA4  
 $4 \times 25/10GbE$



Intel Ethernet Network Adapter  
E810-XXVDA2  
 $2 \times 25/10GbE$



Intel Ethernet Network Adapter  
E810-XXVDA4T  
 $4 \times 25/10GbE$ , enhanced timing precision



Intel Ethernet Network Adapter  
XXV710-DA2T  
 $2 \times 25/10GbE$ , enhanced timing precision



Intel Ethernet Converged Network Adapter  
X710-DA2  
 $2 \times 10/1GbE$



Intel Ethernet Converged Network Adapter  
X710-DA4  
 $4 \times 10/1GbE$



# ETHERNET АДАПТЕРИ ДЛЯ ОСР

## Single Port Adapters

QSFP28  
Max:  
10Gb

Intel® Ethernet Network Adapter  
E810-CQDA1 for OCP 3.0  
1x100/50/25/10GbE, **OCP network adapter 3.0**  
Intel® Ethernet Network Adapter  
E810-CQDA1 for OCP  
1x100/50/25/10GbE, OCP 2.0 Type 2



QSFP4  
Max:  
40Gb

Intel® Ethernet Network Adapter  
E810-CQDA2 for OCP 3.0  
2x100/2x50/4x25/8x10GbE, **OCP network adapter 3.0**



SFP28  
Max:  
5Gb

Intel Ethernet Server Adapter

XL710-QDA2 for OCP  
2x40/4x10GbE, OCP 2.0 Type 1



Intel Ethernet Network Adapter  
XXV710-DA2 for OCP  
2x25/10/1GbE, OCP 2.0 Type 1 & 2



Intel® Ethernet Network Adapter  
E810-XXVDA2 for OCP 3.0  
2x25/10GbE, **OCP network adapter 3.0**

Meadow Flat  
(E810-XXVDA4 for OCP 3.0)  
4x25/10GbE, **OCP network adapter 3.0**



SFP+  
Max port speed:  
10Gb

Intel Ethernet Server Adapter  
X710-DA2 for OCP  
2x10/4x1GbE, OCP 2.0 Type 1 & 2



Intel Ethernet Server Adapter  
X710-DA2 for OCP 3.0  
2x10/1GbE, **OCP network adapter 3.0**



Intel Ethernet Server Adapter  
X710-DA4 for OCP 3.0  
2x10/1GbE, **OCP network adapter 3.0**



10GBASE-T  
Max:  
10Gb

Intel® Ethernet Network Adapter  
X710-T2L for OCP 3.0  
2x10/5/2.5/1GbE, **OCP network adapter 3.0**



Intel® Ethernet Network Adapter  
X710-T4L for OCP 3.0  
4x10/5/2.5/1GbE, **OCP network adapter 3.0**



1GBASE-T  
Max:  
1Gb

Intel® Ethernet Network Adapter  
I710-T4L for OCP 3.0  
4x1GbE, **OCP network adapter 3.0**



Intel® Ethernet Network Adapter  
I350-T4 for OCP 3.0  
4x1GbE, **OCP network adapter 3.0**



# ЕВОЛЮЦІЯ АРХІТЕКТУРИ МЕРЕЖЕВИХ АДАПТЕРІВ

Capability Richness

More  
↑  
Less

## Intel Ethernet 700 Series



710

## Intel Ethernet 800 Series



E810



E830



More

### Security

- Signed & Authenticated FW Protection, FW security Detection and Recovery

### Partially Programmable Pipeline

- Table definition modifications with a Dynamic Device Personalization (DDP) Profile Packages

### RDMA iWARP

### Intel Ethernet Adaptive Virtual Function (Intel Ethernet AVF)

### Security

- Hardware Root of Trust, Authenticate on Update/Boot

### Precision Clocks Synchronization

- SyncE (external PHY), 1588/PTP

### Queue and Steering Hardware Assists

- Application Device Queues (ADQ)

### Fully Programmable Pipeline

- Table definition with DDP Packages
- Flow matching acceleration

### Converged Ethernet

- RDMA (iWARP & RoCEv2)
- NVMe over Fabric (RDMA, TCP)

### Security Advancements

- Attestation, Key Revocation, Anti Rollback, True Random Number Generator

### Precision Clocks Synchronization

- SyncE (integrated)
- Precision Time Management, Linux Launch Time

### Queue and Steering Hardware Assists

- Application Device Queues (ADQ) v2

### Fully Programmable Pipeline

- Supports millions of flows
- Packet modification
- Flow observability (statistics)

10/25/40GbE

25/50/100GbE

25/50/100/200GbE

For more information go to [intel.com/ethernet](http://intel.com/ethernet)



# ТЕХНОЛОГІЇ ТА ПЕРЕВАГИ

- ◆ Lower Latency
- ◆ Higher Throughput
- ◆ Reduced host CPU Overhead
- ◆ Multiple Form-factors

## Application Device Queues (ADQ) 2.0

Technology designed to improve application-specific queuing and steering.



## Dynamic Device Personalization (DDP)

Improves Packet Processing Performance

Performing frame classification in the network adapter increases efficiency and reduces CPU overhead in the host

## Precision Timing

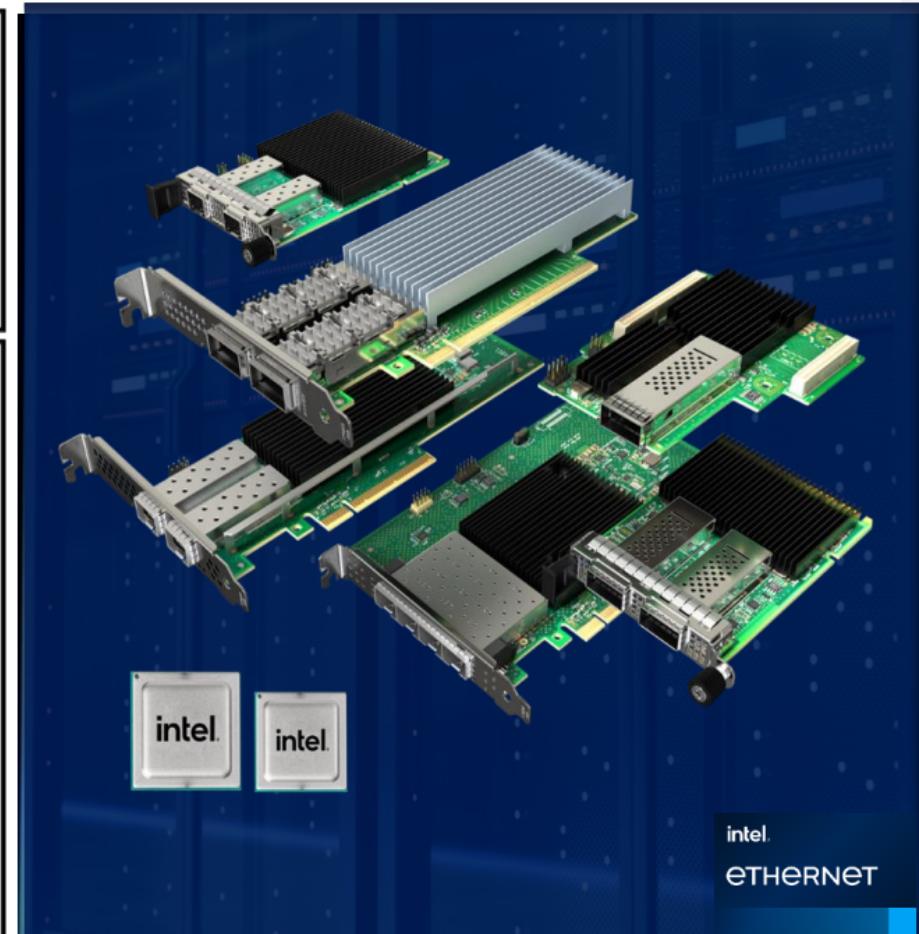


Support for IEEE 1588 Precision Time Protocol v2. Precise clock synchronization for 5G RAN, financial services, and industrial use

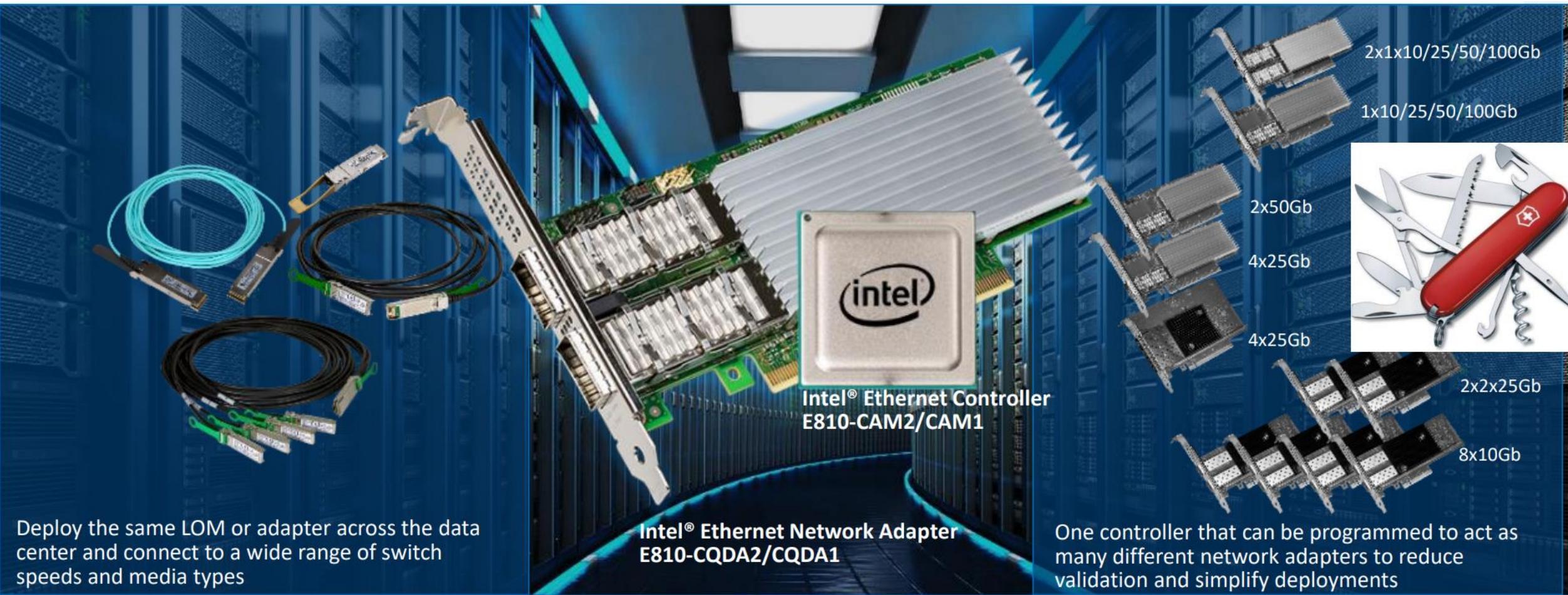
## RDMA

Intel offers both RoCEv2 and iWARP

RDMA is a host-offload, host-bypass technology enabling direct memory-to-memory data communications between applications over a network.



# Ethernet Port Configuration Tool (EPCT)



# Intel Optics



SFP+	SFP28	QSFP+	QSFP28
SR/SRX/LR	SR/SRX/LR	SR/LR	SRX/LRX*
10/1GbE <sub>(SR/LR)</sub> 10GbE <sub>(SRX)</sub>	10/25GbE <sub>(SR)</sub> 25GbE <sub>(SRX/LR)</sub>	40/10GbE	25/100GbE <sub>(SRX)</sub> 100GbE <sub>(LRX)</sub>

SR - Short Range 100m

LR – Long Range 10km

ER – Extended Range 40km (Note, must not exceed 2W)

Надійні рішення для мережевих адаптерів Intel

Промо ціни!

# SUPPLY

Жовтень 2022

Зараз

GbE	Adapter	Family	December	January	February	March	Trend
10	Campbell Flat	X710-T2L OCP 3.0					↗
10	Campbell Flat	X710-T4L OCP 3.0					↗
10	Campbell Pond	X710-T2L					↗
10	Campbell Pond	X710-T4L					↗
10	Cascade Canal	X527DA2/4 OCP					↗
10	Eagle Fountain	X710-DA2					↗
11	Eagle Fountain	X710-DA4					↗
10	Ferris Flat	X710-DA2/DA4 OCP 3.0					↗
10	Fort Pond	X710-T4L					↗
10	Sage Pond	X550-T2					↗
10	Taylor Canal	X557-T2 OCP					↗
10	Kerby Flat	X710-DA2 OCP					↗
25	Aspen Flat	E810-XXVDA2 OCP 3.0					↗
25	Clifton Channel	E810-XXVDA2					↗
25	Harbor Channel	XXV710-DA2					↗
25	Meadow Flat	E810-XXVDA4 OCP 3.0					↗
25	Mill Flat	XXV710-DA2 OCP					↗
25	Salem Channel	E810-XXVDA4					↗
25	Westport Channel	E810-XXVDA4T					↗
40	Spirit Falls	XL710-DA1/DA2					↗
40	Fisher Flat	XL710-DA1/DA2 OCP					↗
100	Chapman Beach	E810-2CQDA2					↗
100	Empire Flat	E810-CQDA1/CQDA2 OCP 3.0					↗
100	Logan Beach	E810CQDA2TG1/GG1					↗
100	Tacoma Rapids	E810-CQDA1					↗
101	Tacoma Rapids	E810-CQDA2					↗
100	Maclarens Summit	VACC					↗
10/25/100	SRX Optics	Optics					↗
10/25/40	SR Optics	Optics					↗
10/40	LR Optics	Optics					↘
25/100	LRX Optics	Optics					↗
ACCL	Lewis Hill	IQA89601/IQA89701					↗

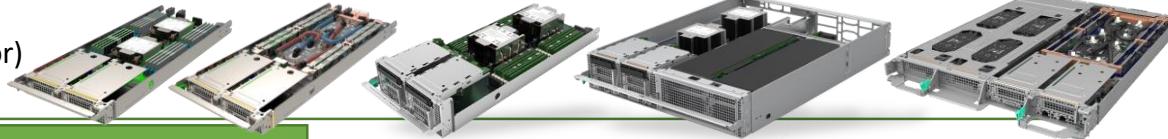
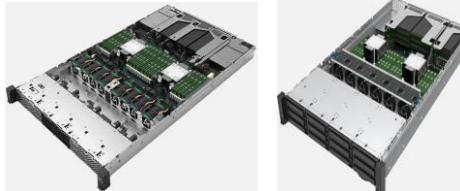
GbE	Adapter	Family	April	May	June	July	Trend
1	Beaver Lake	I210-T1					↗
1	Main Canal	I357-T4 OCP					↗
1	Painters Flat	I350-T4 OCP 3.0					↗
1	Shelter Island	EXP19301					↗
1	Stony Lake	I350-T2/T4					↗
2.5	Fox Pond	I225-T1					↗
10	Campbell Flat	X710-T2L OCP 3.0					↗
10	Campbell Flat	X710-T4L OCP 3.0					↗
10	Campbell Pond	X710-T2L					↗
10	Campbell Pond	X710-T4L					↗
10	Cascade Canal	X527DA2/4 OCP					↗
10	Eagle Fountain	X710-DA2					↗
10	Eagle Fountain	X710-DA4					↗
10	Ferris Flat	X710-DA2/DA4 OCP 3.0					↗
10	Fort Pond	X710-T4					↗
10	Sage Pond	X550-T2					↗
10	Taylor Canal	X557-T2 OCP					↗
10	Kerby Flat	X710-DA2 OCP					↗
25	Aspen Flat	E810-XXVDA2 OCP 3.0					↗
25	Clifton Channel	E810-XXVDA2					↗
25	Harbor Channel	XXV710-DA2					↗
25	Meadow Flat	E810-XXVDA4 OCP 3.0					↗
25	Mill Flat	XXV710-DA2 OCP					↗
25	Salem Channel	E810-XXVDA4					↗
25	Westport Channel	E810-XXVDA4T					↗
40	Spirit Falls	XL710-DA1/DA2					↗
40	Fisher Flat	XL710-DA1/DA2 OCP					↗
100	Chapman Beach	E810-2CQDA2					↗
100	Empire Flat	E810-CQDA1/CQDA2 OCP 3.0					↗
100	Logan Beach	E810CQDA2TG1/GG1					↗
100	Tacoma Rapids	E810-CQDA1					↗
100	Tacoma Rapids	E810-CQDA2					↗
100	Maclarens Summit	VACC					↗
10/25/100	SRX Optics	Optics					↗
10/25/40	SR Optics	Optics					↗
10/40	LR Optics	Optics					↗
25/100	LRX Optics	Optics					↗
ACCL	Lewis Hill	IQA89601/IQA89701					↗

# ПЕРЕВАГИ МЕРЕЖЕВИХ КОНТРОЛЕРІВ INTEL

- 40 років роботи над інноваціями та стандартами Ethernet
- Продукти для всіх сегментів ринку
  - ПК, Сервер, Адаптер, IoT, Датацентр
  - Розширенний температурний діапазон для Embedded/IoT рішень
- Перевірені Продукти
  - Провідна надійність
  - Надзвичайно низький DPM
- Екосистема
- Безпрецедентна підтримка та доступність

# INTEL DSG Server Products by MiTAC

**HPC**  
2U4N  
2U2N  
2U1N

	2023	2024	2025
		[Eagle Stream] D50DNP (Denali Pass), 2 Socket, Shadow-core, Multi-Node, Air-cooled & Liquid-cooled	
	16 DDR5 DIMMs , 2x M.2, up to 2x U.2 per node 4 module types (Compute, Management, PCIe Accelerator, PVC OAM Accelerator) 2 x16 PCIe 5.0 per 1U node or 4 x16 PCIe 5.0 per 2U node		
	[Whately] D50TNP (Tennessee Pass), 2 Socket, Shadow-core, Multi-Node, Air-cooled & Liquid-cooled		
	24 DDR4 DIMMs (8 Barlow Pass), 2x M.2, up to 2x U.2 per node, 10G LOM 4 module types (Compute, Management, E1.L Storage, PCIe Accelerator) 2 x16 PCIe 4.0 per 1U node or 4 x16 PCIe 4.0 per 2U node		
	[Eagle Stream] M50FCP (Fox Creek Pass), Air-cooled ,Spread-core, Single Node 1U/2U		
	32 DDR5 DIMMs , 2x M.2, up to 8x PCIe 5.0 slots, 1 OCP3 24x 2.5" SAS/SATA/NVMe; 12x 3.5" SAS/SATA in 2U 12x 2.5" SAS/SATA/NVMe; 4x 2.5" SAS/SATA/NVMe in 1U		
	[Whately] M50CYP (Coyote Pass), 2 Socket, Spread-core, Single Node 1U/2U		
	32 DDR4 DIMMs (16 Barlow Pass), 2x M.2, up to 8x PCIe 4.0 slots, 1 OCP3 24x 2.5" SAS/SATA/NVMe; 12x 3.5" SAS/SATA in 2U 12x 2.5" SAS/SATA/NVMe in 1U		
	[Purely] S2600WF (Wolf Pass), 2S, Spread-core, 1U/2U		EOL Plan : end of 2023
	24 DDR4 DIMMs (12 Apache Pass) Up to 8x PCIe 3.0 slots, 2x 10G LOM 24x 2.5" SAS/SATA/NVMe; 12x 3.5" SAS/SATA in 2U 8x 2.5" SAS/SATA/NVMe; 4x 2.5" SAS/SATA in 1U		

# Дві платформи для основних потреб

## Intel® Server M50CYP

Featuring 3rd Gen Intel® Xeon® Scalable processors

The right balance of price and performance for the majority of your data center workloads.



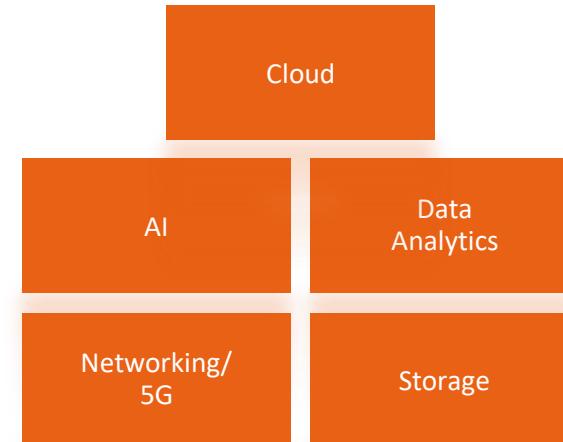
Низька

I/O Інтенсивність

## Intel® Server M50FCP

Featuring 4th Gen Intel® Xeon® Scalable processors

Enhanced I/O and built-in, workload-specific accelerators for your data-intensive workloads.



Висока

# ПЕРЕВАГИ СЕРВЕРІВ INTEL

- **Якість**
- **Ціна**
  - Гнучке ціноутворення
- **Гарантія**
  - 3 роки, можливість розширення до 5
- **Підтримка**

# ПРОДУКТОВИЙ ПОРТФЕЛЬ VAD «ASBIS-УКРАЇНА»

## СЕРВЕРИ



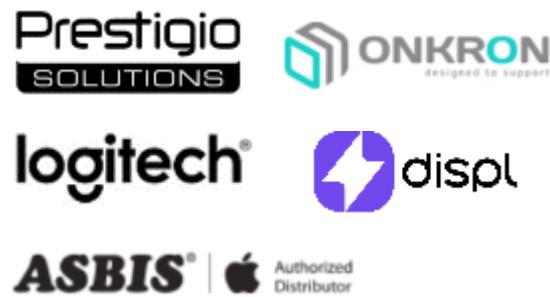
## С3Д



## МЕРЕЖЕВЕ ОБЛАДНАННЯ та КІБЕРБЕЗПЕКА



## АУДІО-ВІЗУАЛЬНІ РІШЕННЯ



## ПЗ

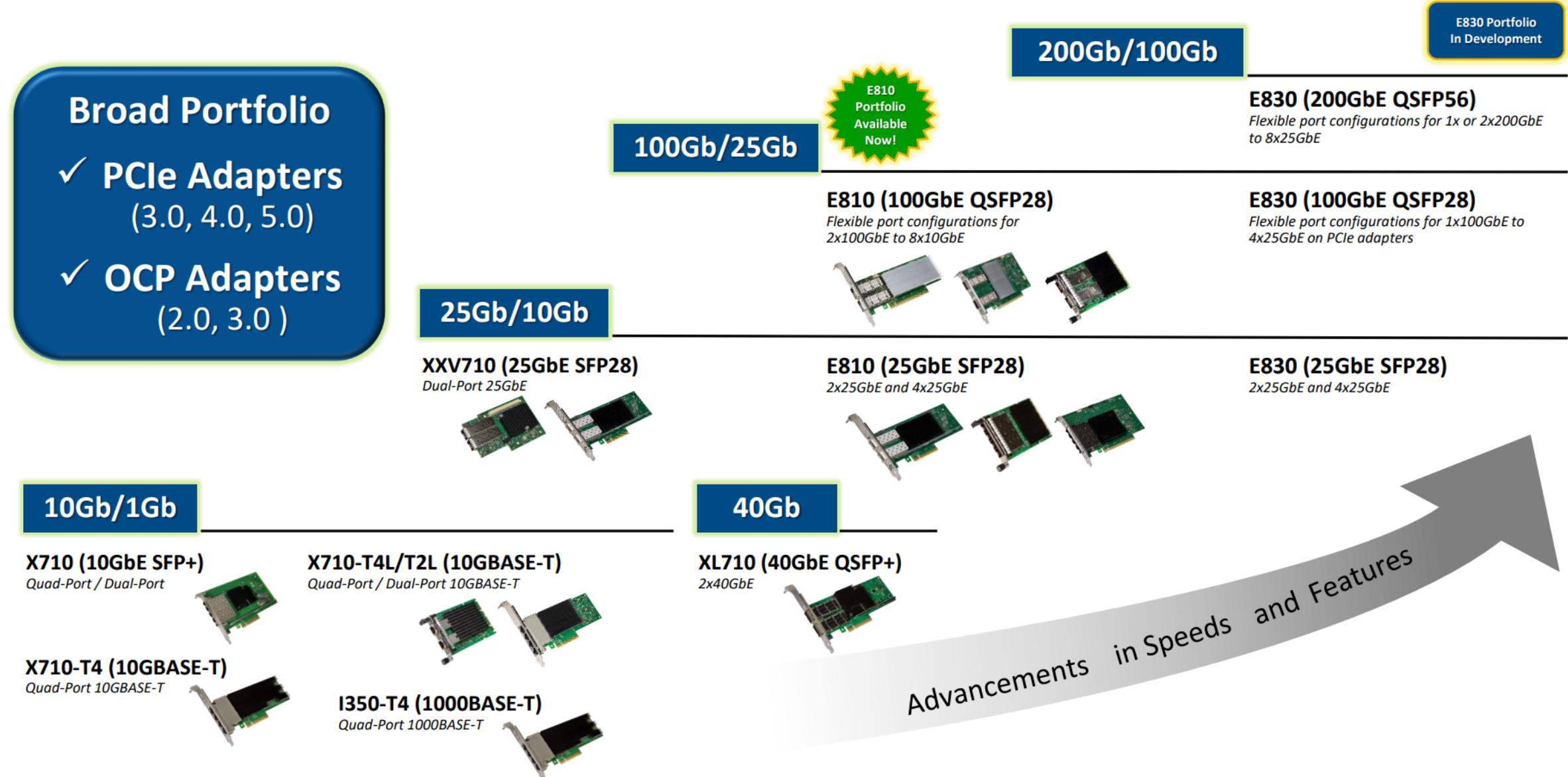


## ІНЖЕНЕРНА ІНФРАСТРУКТУРА



# BACKUP

# ЕВОЛЮЦІЯ МЕРЕЖЕВИХ АДАПТЕРІВ INTEL



# Pre-2019 -- Intel® Ethernet Product Naming

Intel® Ethernet naming scheme now implemented across all hardware product types

**Base name:** Identifies product type

Base name	Description
Intel® Ethernet Connections	IP Block
Intel® Ethernet Controller	MAC, MAC/PHY -Silicon
Intel® Ethernet Desktop Adapter	Desktop
Intel® Ethernet Converged Network Adapter	Server CN NIC
Intel® Ethernet Network Adapter	Server NIC
Intel® Ethernet Network Connection	PHY Only
Intel® Ethernet Mezzanine Adapter	OEM Mezzanine cards
Intel® Ethernet Express Module	PCIe® Module
Intel® QuickAssist Adapter	QuickAssist adapter

**Suffixes:** Differentiate between similar product SKUs

Key Feature	Suffix	Interface Silicon	Suffix	Interface Adapter	Suffix	Port Suffix
Alphabetical	A, B, C, ...	KR, SFI	K	Short Range	SR	1
<b>Exception</b>		SerDes, SGMII, RGMII	S	Long Reach	LR	2
Industrial Temp	I	BASE-T	T	OR BASE-T	T	4
		QSFP	Q	Single Lane	KR	
		XAUI, K4	X	Quad Lane	KX4	
		Multiple -Defined by PME	M	SFP+/SFP28	DA	
				QSFP+/QSFP28	QDA	

[Feature]

[Interface - Silicon]

[Interface - Adapter]

[Ports]

↓  
**[Base name] [Series & Generation]-[suffix]**

Speed (Max)	Series	Linux Driver
I = 1GbE	200	GbE Client e1000
X = 10GbE	300	GbE Server igb
XXV = 25GbE	500	ixgbe
XL = 40GbE	700	i40e
C = 100GbE	800	ice

Series+Generation	Code Name
340	Barton Hills NICs
350	Powerville
520	Niantic NICs
540	Twinville
550	Sageville / Magnolia Park
710	Fortville
722	Fort Park/Lewisburg
810	Columbiaville
820	Columbia Park

## PHY-Only Products

PHY-only products identified by 7, 8, or 9 in last (units) digit, following sequence/series number  
First generation PHY: 7, Second Generation: 8, etc  

- PHYs share series & sequence with associated MAC
- Suffix same as MACs

Example: Barnesville  
▪ Intel® Ethernet Network Connection I347-AT4

**Generation:** Generation of Intel Ethernet silicon, reflected in 10s digit

# New -- Intel® Ethernet Product Naming 2019+

Intel® Ethernet naming scheme now implemented across all hardware product types

**Base name:** Identifies product type

Base name	Description
Silicon	
Intel® Ethernet Connections	IP Block
Intel® Ethernet Controller	MAC, MAC/PHY - Silicon
<b>Adapters</b>	
Intel® Ethernet Network Adapter	Ethernet Controller Adapter
Intel® Ethernet Network Connection	PHY Only
Intel® Ethernet Mezzanine Adapter	OEM Mezzanine cards
Intel® QuickAssist Adapter	QuickAssist adapter
Intel® Smart Network Adapter	SmartNIC
Intel® Smart Network Controller	SmartNIC SoCs

[Base Name]

[Series]

[Suffix]

**Suffixes:** Differentiate between similar product SKUs

Max Port Speed	Suffix	Silicon Version	Suffix	Interface Silicon	Suffix	Interface Adapter	Suffix	Port Suffix
400Gb	CD	Alphabetical	A, B, C,...	KR, SFI	K	Short Range	SR	1
200Gb	CC	<b>Exception</b>		SerDes, SGMII, RGMII	S	Long Reach	LR	2
100Gb	C	<i>Industrial Temp</i>	I	BASE-T	T	OR BASE-T	T*	4
50Gb	L	BASE-T	T	XAU, K4	X	Single Lane	KR	8
25Gb	XXV			Multiple - Defined by PME	M	Quad Lane	KX4	
10Gb	X			SFP+ / SFP28		DA		
				QSFP+ / QSFP28		QDA		
				QSFP Double Density		QDD		
				Silicon Photonics		SiP		
				[Interface - Adapter]		[Ports]		

Max Port Speed

[Silicon Build Version]

[Interface - Silicon]

Series + Generation	Code Name
E560	Next-generation 25/10Gb Foundational NIC
E810	Columbiaville
E830	Next-generation 800 Series
E910	Future Generation Foundational NIC

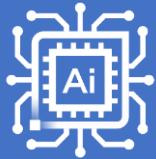
## PHY-Only Products

- PHY-only products identified by 7, 8, or 9 in last (units) digit, following sequence/series number
- First generation PHY: 7, Second Generation: 8, etc
  - PHYS share series & sequence with associated MAC
  - Suffix same as MACs
  - Example: Copperdale
  - Intel® Ethernet Network Connection X557-AT4

\* 'T' following port suffix indicates enhanced timing product.  
Example: Intel® Ethernet Network Adapter XXV710-DA2T (Edgewater Channel)

# Built-in Accelerators

Speed many of today's most valuable and performance-hungry workloads



## Intel® Deep Learning Boost with Advanced Matrix Extensions

Delivers a significant performance increase for AI training and inferencing workloads versus prior generation.



## Intel® Dynamic Load Balancer

Improves performance related to handling network data, including distributed processing, dynamic load balancing, and dynamic network processing reordering.



## Next Generation Intel® QuickAssist Technology

Accelerate performance for tasks such as security, private key protection, and data compression/decompression.



## Intel® Data Streaming Accelerator

Improves performance of applications reliant on data movement, while offloading data movement operations to free CPU cycles for applications.

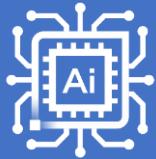


## Intel® In-memory Analytics Accelerator

Increases query throughput for in-memory database and analytics workloads, while decreasing their memory footprint.

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