



**OSS**  
ONE STOP SYSTEMS

# OSS Product Line 2021

## A.I on the *FLY*

Bringing HPC to the Edge

## Company Background

- ✓ Founded in 1998
- ✓ Publicly Owned
- ✓ Headquarters in San Diego, CA
- ✓ 20+ Years Experience
- ✓ Strong Management Team

## Technology Leader

- ✓ PCI Express over cable leader
- ✓ Specialized HPC platforms
- ✓ Bringing HPC to the 'Edge'

**UL, ISO 9001 certified**



## Transportable AI systems targeting EDGE applications

### • High Performance, Low Latency Switch Fabrics *enabling...*

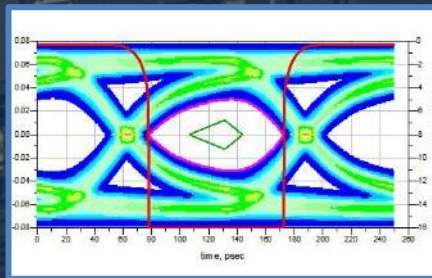
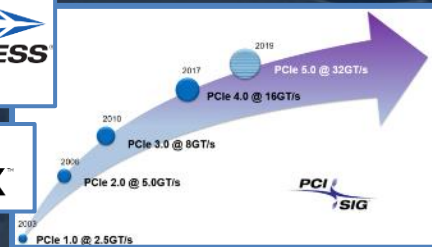
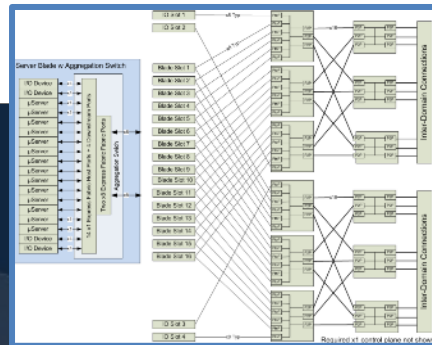
- Vast I/O for Data Collection
- Multiple GPU Arrays for Compute
- Large Banks of Solid-State Memory (SSD)

### • Using the Latest Technologies

- PCIe Gen 4: 16GT/s (Giga Transfers per Second)
- NVLink: 25GT/s (NVIDIA proprietary, OSS Licensed)
- Used in Switch Fabric & Communication between Building Blocks

### • Masters at Signal Integrity

- A must for Highest Performance Networks, Fabrics and Communications



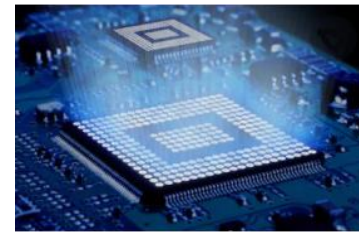
# Focus on Transportable AI

## Customizable Appliances

Compute

Storage

Integrated Data Acquisition, Storage, Compute



## Common Elements

HPC Design – No Compromise Performance

Cooling Options

Modular Power Subsystems

Specialized Rugged Form Factors

Edge Optimized Software Stack

AI  
on the **FLY**™





# Edge Locations



**Gathering Data**



**Reduced Latency**



**Compute/Storage**



**Inferencing**



## Common Elements

- ✓ **Leading Edge PCI Express**
  - Gen 4 today, going to Gen 5
- ✓ **Latest Technology GPUs**
  - NVIDIA A100
  - PCIe & SXM with NVLink 4.0
- ✓ **State of the Art Server Class Processors**
  - ARM Ampere, Intel Ice Lake, AMD Milan
- ✓ **Highest Speed & Capacity NVMe Storage**
  - Gen 4 SSD, U.2/EDSFF, 16 – 32TB
- ✓ **Fastest Network Connectivity**
  - 200Gb/s RDMA Ethernet & Infiniband



# Products & Services



## Compute Accelerators

- High Performance - 16 GPU
- Connects to any server
- Quad PCIe connections
- Rackmount & Modular
- Ruggedized for the Edge



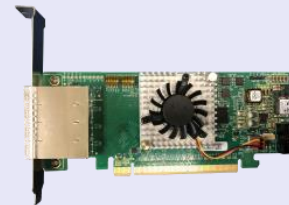
## Flash Storage Arrays

- High performance NVMe
- High-capacity - 400TB
- Removable canisters
- Rugged, mil-spec, SWaP
- M.2, U.2, AIC NVMe



## Custom Servers

- “Perfect Fit” design
- Ruggedized for the Edge
- Private label
- Unique form factor
- Expansion Optimized



## Connectivity

- State-of-the-Art, highest performance PCIe Cable Adapters
- Proprietary technology
- 256Gb/s bandwidth

**Specialized HPC Computing & Storage products designed for the EDGE**



## Compute Accelerators

- High Performance - 16 GPU
- Connects to any server
- Quad PCIe connections
- Rackmount & Modular
- Ruggedized for the Edge



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# Gen 3 Compute Accelerators

## PCIe 3.0 4U Value, Rackmount



- (8) Double-wide x16 + (2) single-wide x16 I/O slots
- (2) PCIe x16 Uplinks, 256Gb/s total bandwidth
- PCIe 'slots & watts' at a value price
- AC Redundant power, optional fan speed controller dial

## PCIe 3.0 EB3450, Modular



- (4) Double-wide x16 I/O slots
- (1) PCIe x16 Uplinks, 128Gb/s total bandwidth
- Ruggedized design + GPU hold down bar
- AC/DC Redundant power & cooling, SNMP system monitoring

## PCIe 3.0 3U CA16000



- (16) Double-wide x16 + (4) Single-Wide x16 I/O slots
- Up to (4) PCIe x16 Uplinks, 512Gb/s total bandwidth
- Front loading removable canisters
- AC Redundant power & cooling, IPMI system monitoring

# Gen 4 Compute Accelerators



## PCIe 4.0 4U Pro Rackmount

- (8) Double-wide x16 + (2) Single-wide x16 I/O slots
- Up to (4) PCIe x16 Uplinks, 1.24Tb/s total bandwidth
- Ruggedized frame-in-frame design + GPU hold down bar
- AC/DC Redundant power & cooling, IPMI system monitoring



## PCIe 4.0 EB4400 Modular

- (4) Double-wide x16 + (1) Single-wide x16 I/O slots
- Up to (2) PCIe x16 Uplinks, 512Gb/s total bandwidth
- Ruggedized frame-in-frame design + GPU hold down bar
- AC/DC Redundant power & cooling, IPMI system monitoring



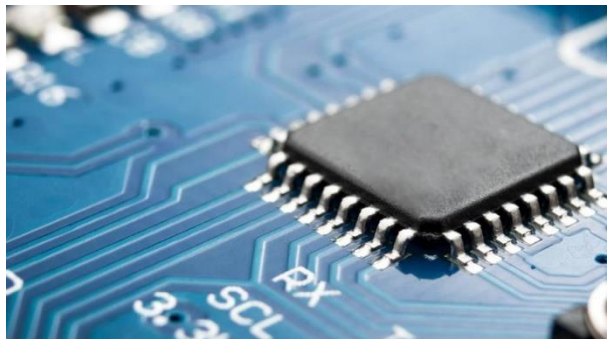
## PCIe 4.0 8U GAS-Rugged SXM

- (8) NVIDIA A100 SXM4 GPUs with NVLink
- AMD Epyc or Dual Intel Scalable Processors
- 200TB NVMe storage + (4) 200Gb/s NICs
- AC/DC Redundant power & cooling, MIL-STD 810G tested



## Flash Storage Arrays

- High performance NVMe
- High-capacity - 400TB
- Removable canisters
- Rugged, mil-spec, SWaP
- M.2, U.2, AIC NVMe



**Specialized HPC Computing & Storage products designed for the EDGE**

# Gen 3 Flash Storage Arrays



## PCIe 3.0 4U Value, Rackmount

- (16) Single-wide x8 I/O slots
- (2) PCIe x16 Uplinks, 256Gb/s total bandwidth
- PCIe 'slots & watts' at a value price, 500TB capacity
- AC Redundant power, optional fan speed controller dial



## PCIe 3.0 EB3400, Modular

- (8) Single-wide x8 I/O slots
- (1) PCIe x16 Uplinks, 128Gb/s total bandwidth
- Ruggedized frame-in-frame design,
- AC/DC Redundant power & cooling, IPMI system monitoring



## PCIe 3.0 3U 32-slot FSA

- (32) Single-wide x8 I/O slots
- Up to (4) PCIe x16 Uplinks, 512Gb/s total bandwidth
- Front loading removable canisters, 1PB capacity
- AC Redundant power & cooling, IPMI system monitoring



# Gen 4 Flash Storage Arrays



## PCIe 4.0 4U Pro Rackmount

- (12) Single-wide x8 + (4) Single-wide x16 I/O slots
- Up to (4) PCIe x16 Uplinks, 1.24Tb/s total bandwidth
- Ruggedized frame-in-frame design, 256TB capacity
- AC/DC Redundant power & cooling, IPMI system monitoring



## PCIe 4.0 EB3400, Modular

- (6) Single-wide x8 + (2) Single-wide x16 I/O slots
- (1) PCIe x16 Uplinks, 256Gb/s total bandwidth
- Ruggedized frame-in-frame design
- AC/DC Redundant power & cooling, IPMI system monitoring



## PCIe 4.0 2U SB2000

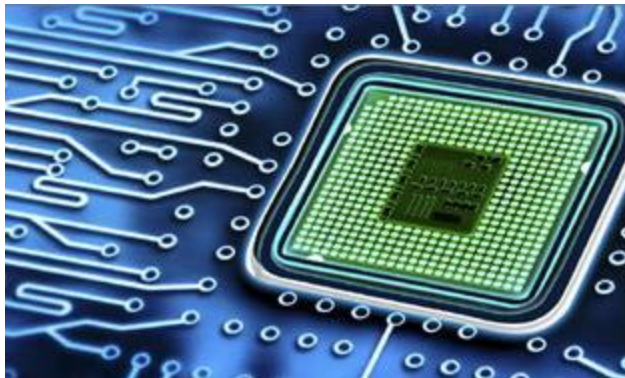
- (24) hot-swap U.2/U.3 NVMe SSDs + (2) PCIe x16 I/O slots
- Up to (4) PCIe x16 Uplinks, 1.24Tb/s total bandwidth
- (3) Front loading removable canisters, 720TB capacity
- AC Redundant power & cooling, IPMI system monitoring

# Products & Services



## Custom Servers

- “Perfect Fit” design
- Ruggedized for the Edge
- Private label
- Unique form factor
- Expansion Optimized



**Specialized HPC Computing & Storage products designed for the EDGE**

# Custom Servers



## 2U Expansion Optimized Server (EOS)

- Single or Dual Socket, AMD EPYC & Intel Ice Lake Processors
- (7) PCIe x16 slots + (24) front-loading SATA/SAS/NVMe SSD bays
- AC Redundant power & cooling



## 3U Short Depth Server (SDS)

- Single or Dual Socket, AMD EPYC & Intel Ice Lake Processors
- (7) PCIe x16 slots + (2) front-loading canisters support (16) SATA/SAS/NVMe SSDs
- Ruggedized to comply with MIL-STD-810G
- AC/DC Redundant power & cooling



## 4U Ruggedized Storage Server (FSAn4)

- Dual Socket Intel Processors with Ion Accelerator Software
- (32) AIC NVMe SSDs in (4) hot-swap removable canisters, 720TB
- Ruggedized to comply with MIL-STD-810G
- AC/DC Redundant power & cooling

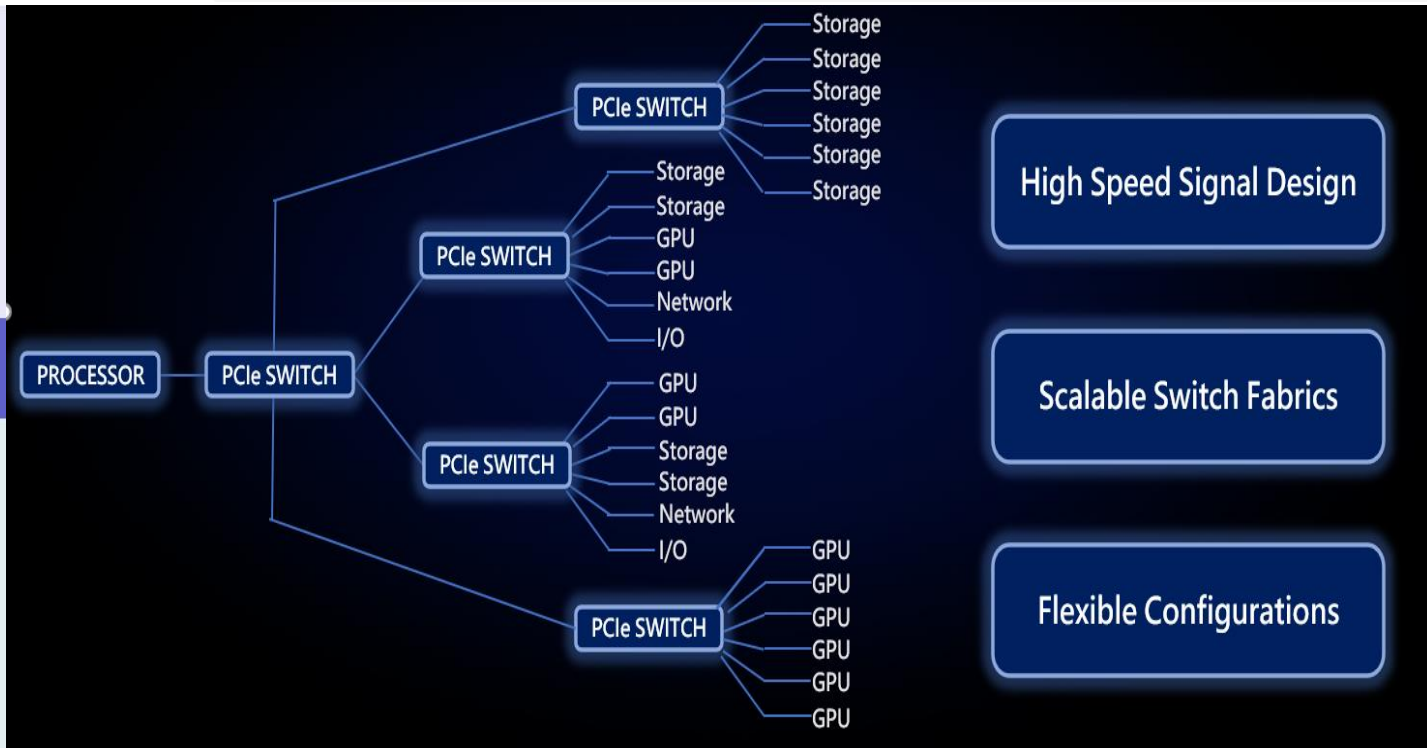


# Products & Services



## Connectivity

- State-of-the-Art, highest performance PCIe Cable Adapters
- Proprietary technology
- 256Gb/s bandwidth



**Specialized HPC Computing & Storage products designed for the EDGE**





## PCIe Cable Adapters

- Cabled PCI Express bandwidth of 256Gb/s
- Extreme low latency <150ns
- No software, no drivers, no protocol conversion, OS agnostic
- AIC/CPCIe/PXle form factors



## PCIe Expansion Backplanes

- (1 – 8) PCIe I/O slots + (1) PCIe x16 uplink
- Single-width and Double-width I/O supported
- Supports bifurcation
- Sold a-la-cart or as an appliance



## Components

- M.2/U.2 hot-swap Carrier cards
- Passive copper & Active optical PCIe cables
- PCIe 4.0 supported + backward compatible with older generations
- AC/DC Redundant power & cooling



# Systems Designed for Transportable AI Applications



## **FSA: Airborne Data Storage**

Deployed today on Navy Aircraft  
Surveillance, Intelligence, Recon



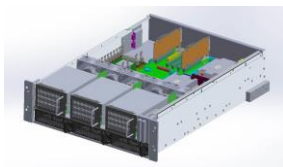
## **EB4450: Land Vehicle Compute Expansion**

Deployed today on autonomous truck fleet  
GPU Compute, Sensor Analytics



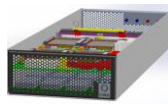
## **Tinian: GPU Airborne Integrated AI Platform**

Deployed today on Navy Aircraft  
GPU Compute, Surveillance



## **Truk: Next Gen Airborne Data Storage**

Concept development for US Military  
Deploy in Q4 2021



## **Saipan: Land Vehicle Compute Appliance**

Compact SXM Compute Appliance  
Deploy in Q4 2021

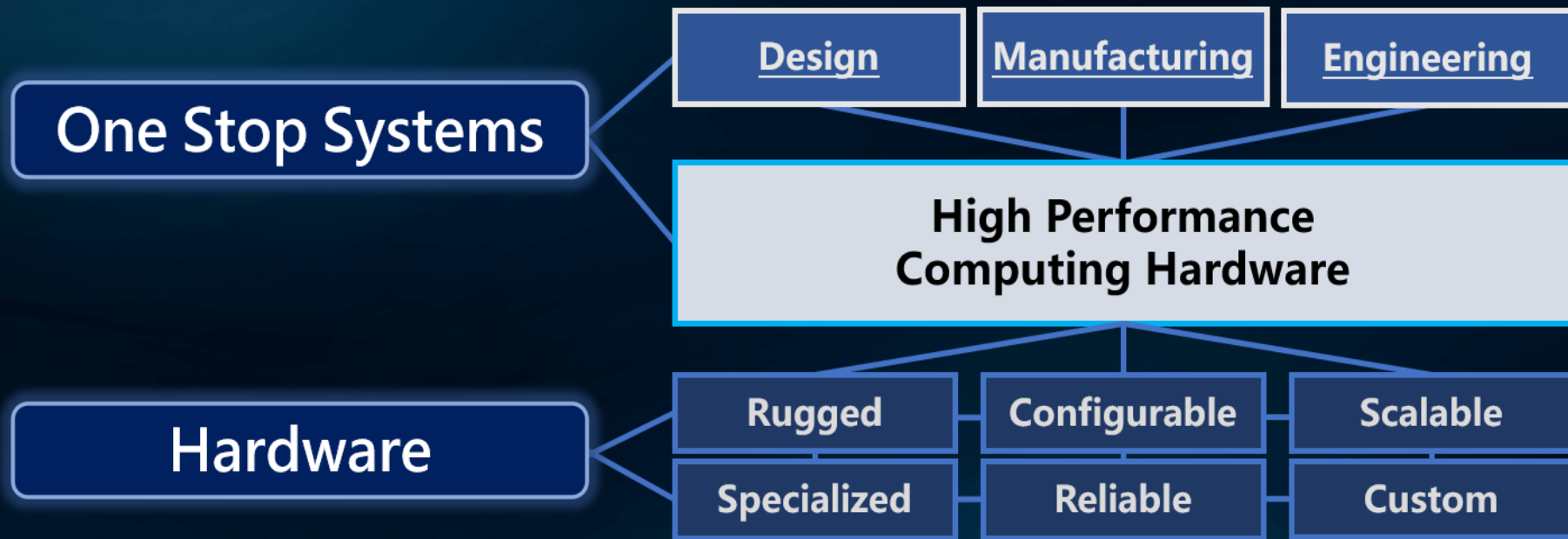




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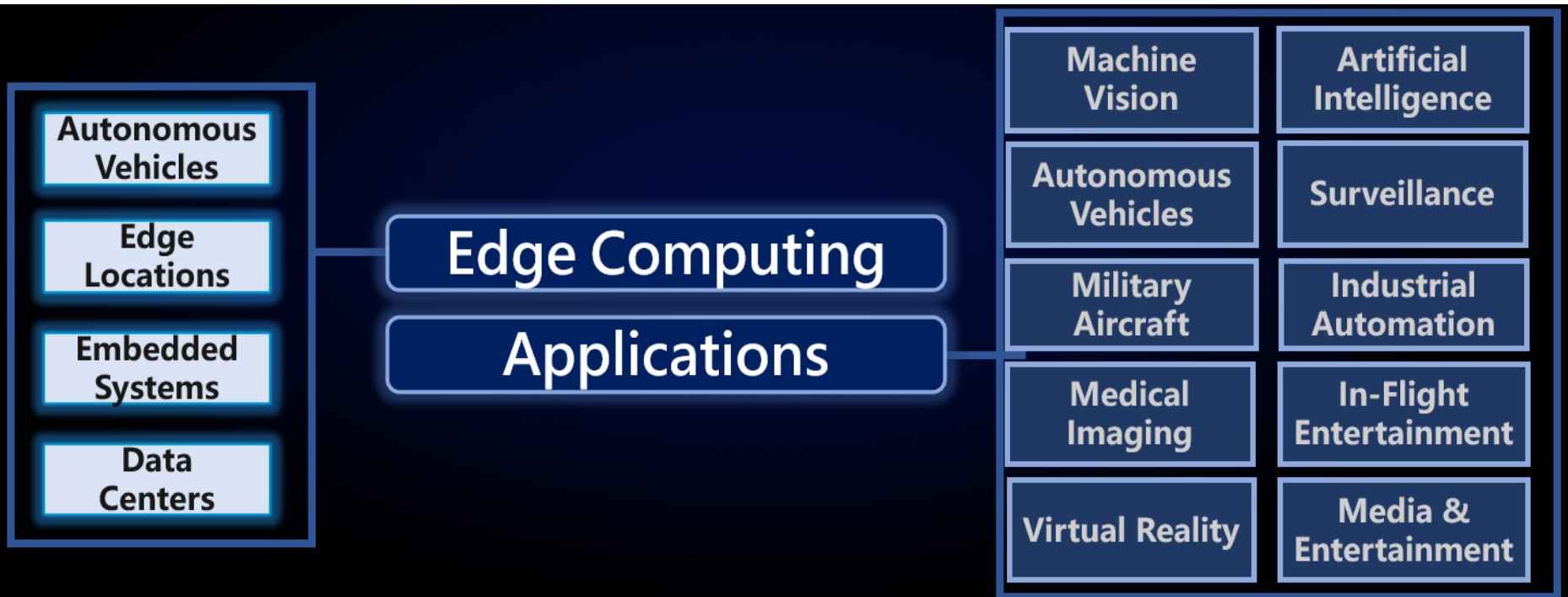
# Summary

AI  
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# THANK YOU



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