

# ASUS ESC8000 G3 GPU Server



# Selling Points

High Density, Hybrid Computing Power

Optimized Thermal Design

Resilient & Efficient

Scalable Expansion Capability

Extreme Performance

User Friendly Design

# Selling Point 1:

## High Density, Hybrid Computing Power

- 1** Standard 19" Cabinet
- 13** ESC8000 G3 GPU servers
- 104** 2-slot GPU cards
- 260** TFLOPS\*



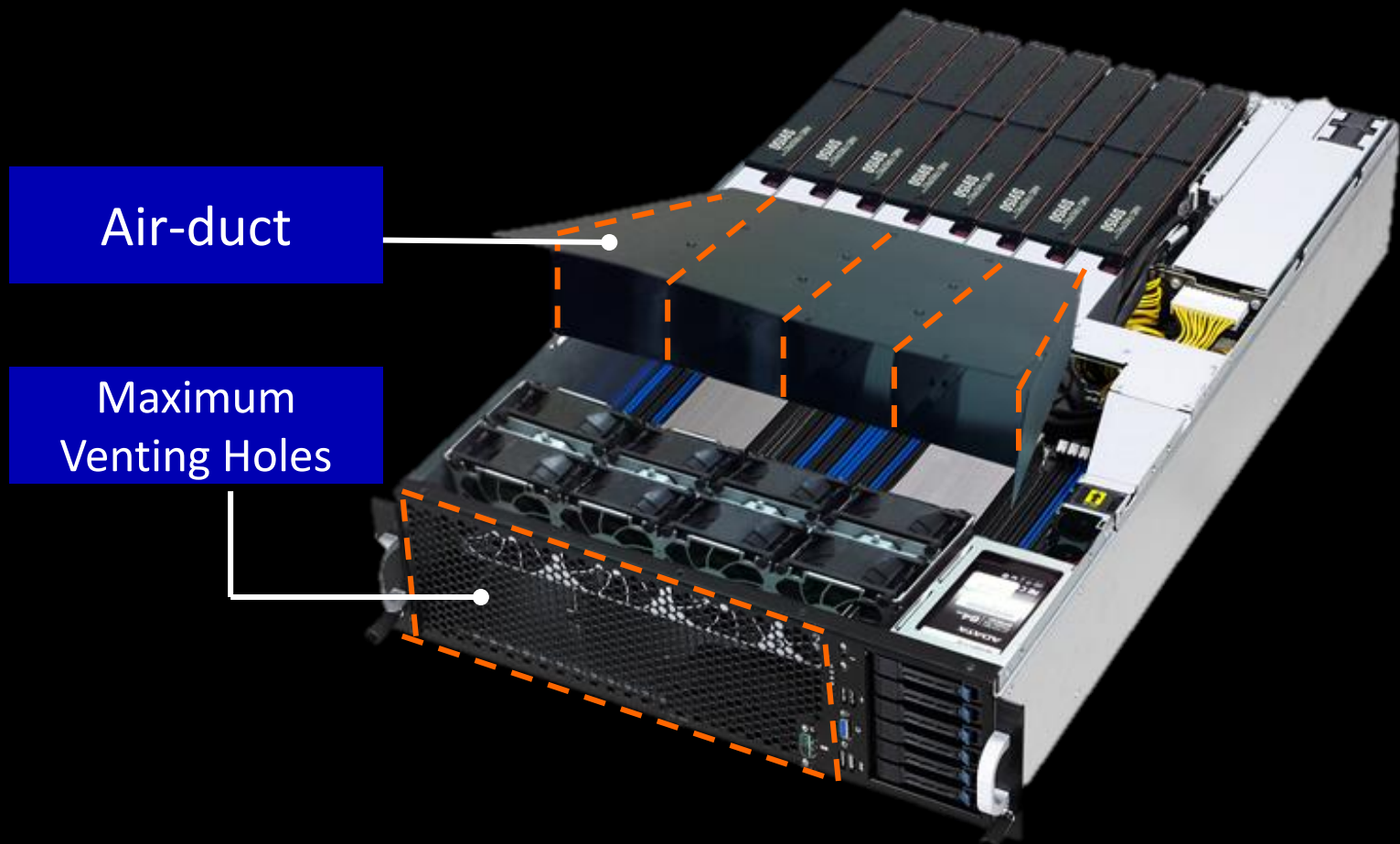
\* Rmax with AMD FirePro S9150

\*\*GPU servers x 13, Ethernet Switch x 1, IB FDR Switch x 1

# Selling Point 2: Optimized Thermal Design (1)

## Airflow Pass-through:

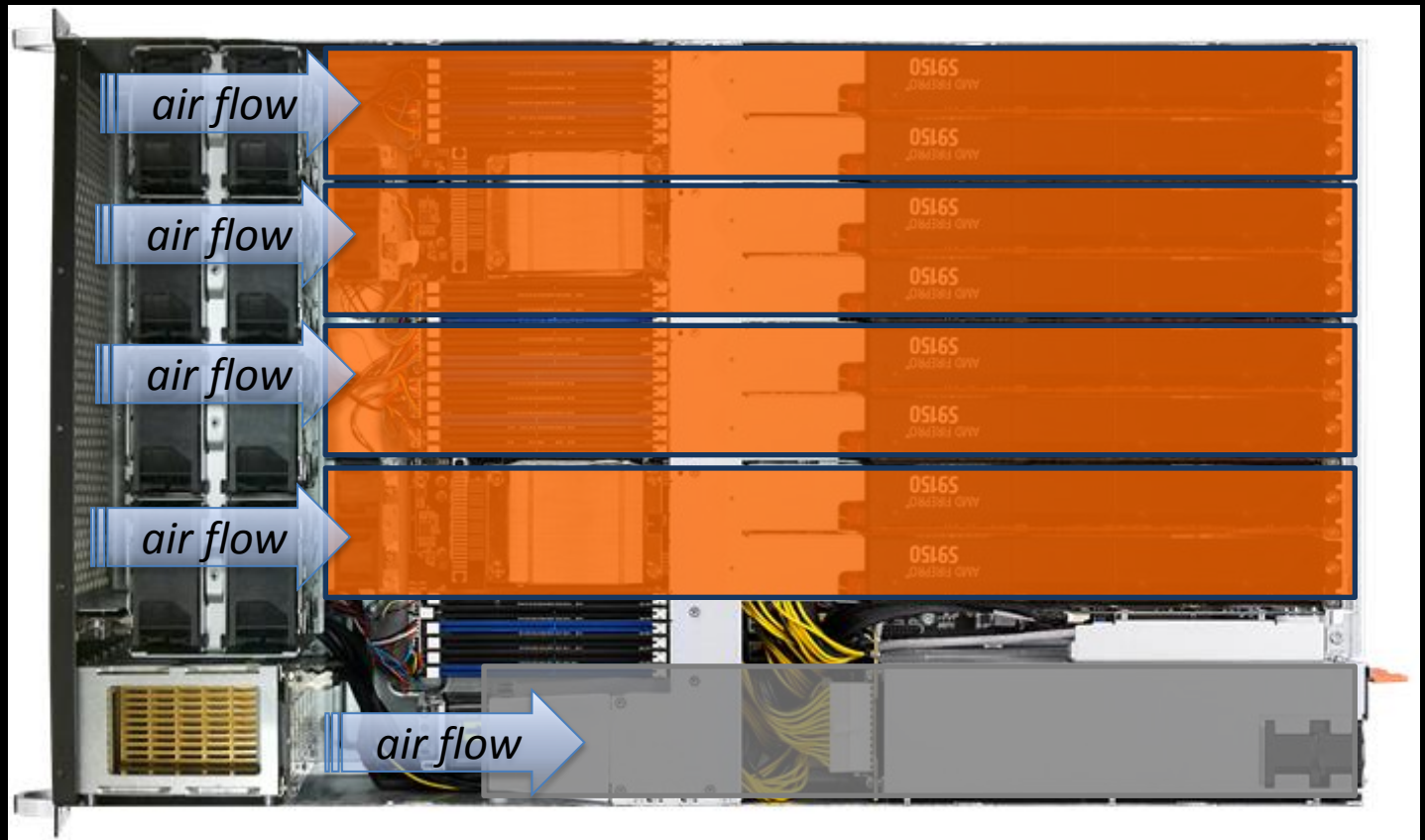
Allowing maximized airflows directly inject to GPU



# Selling Point 2: Optimized Thermal Design (2)

## Dedicated Air Tunnel :

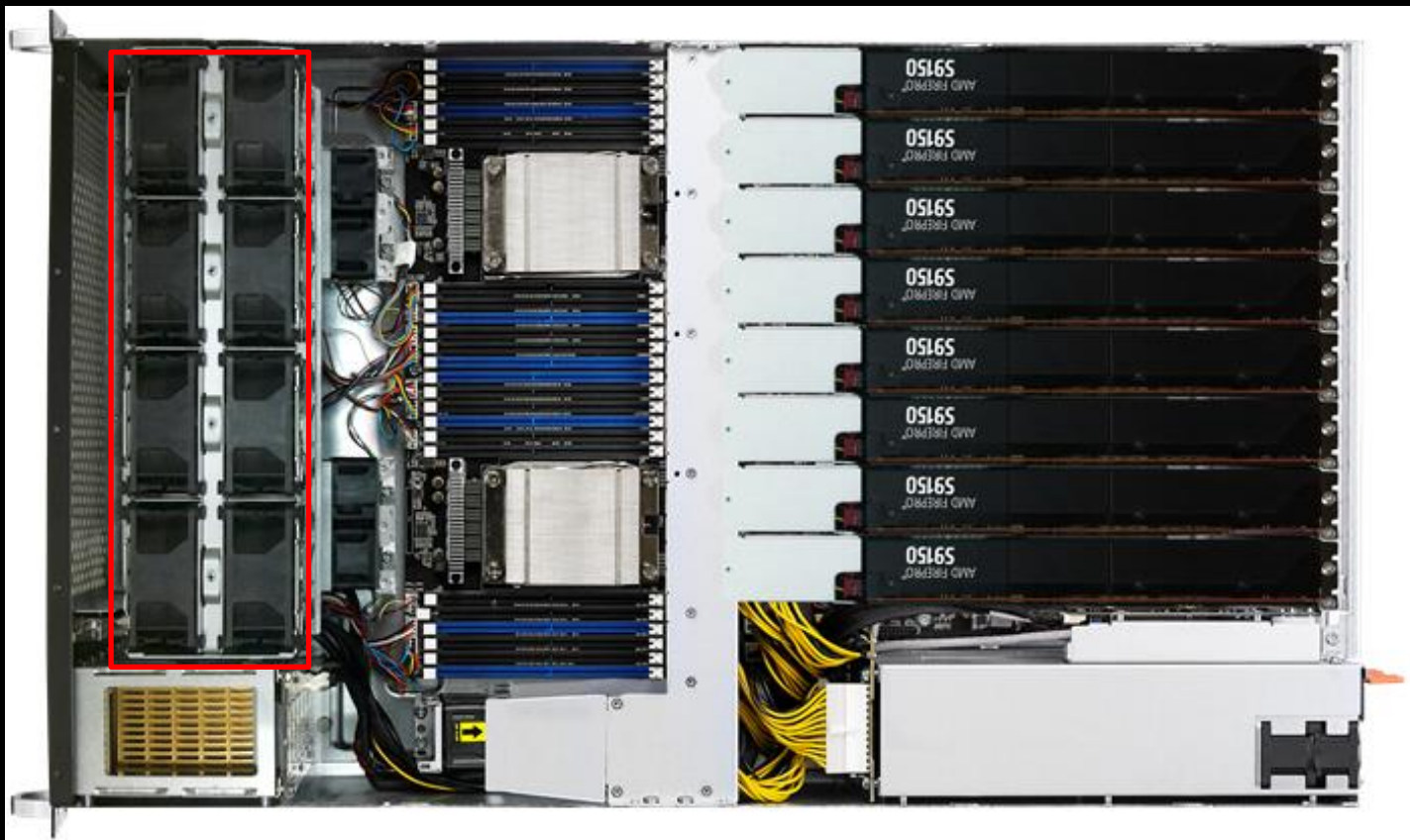
Independent smart FAN for each partition of GPU and CPU



# Selling Point 3: Resilient & Efficient (1)

## Resilient Fan Design :

- Thermal back-up solution for GPU cards
- Energy efficiency for power saving, which is up to **160W** with full configuration(8GPU).

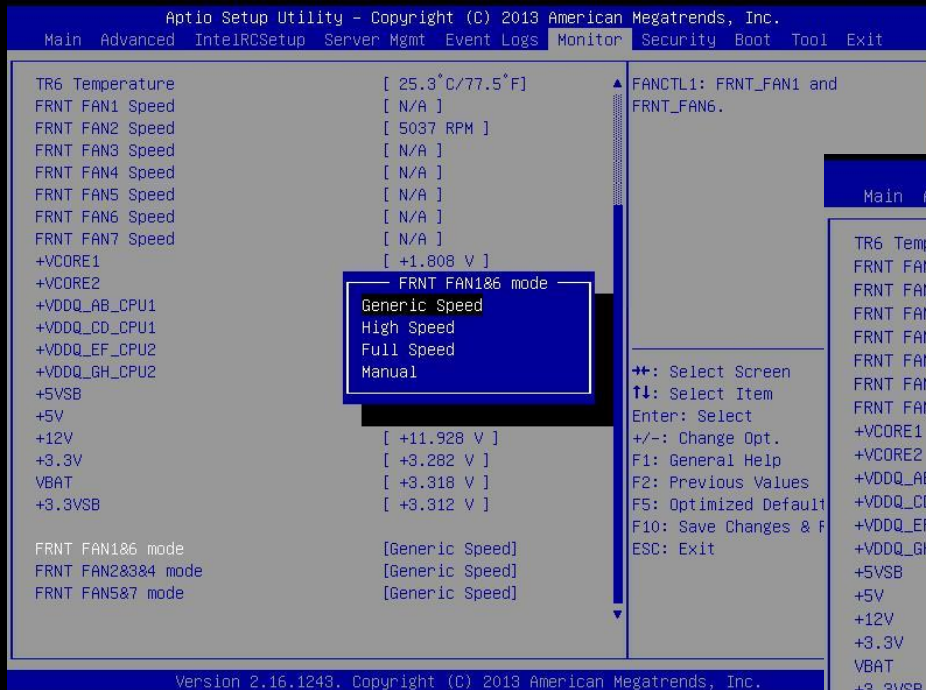


# Selling Point 3: Resilient & Efficient (2)

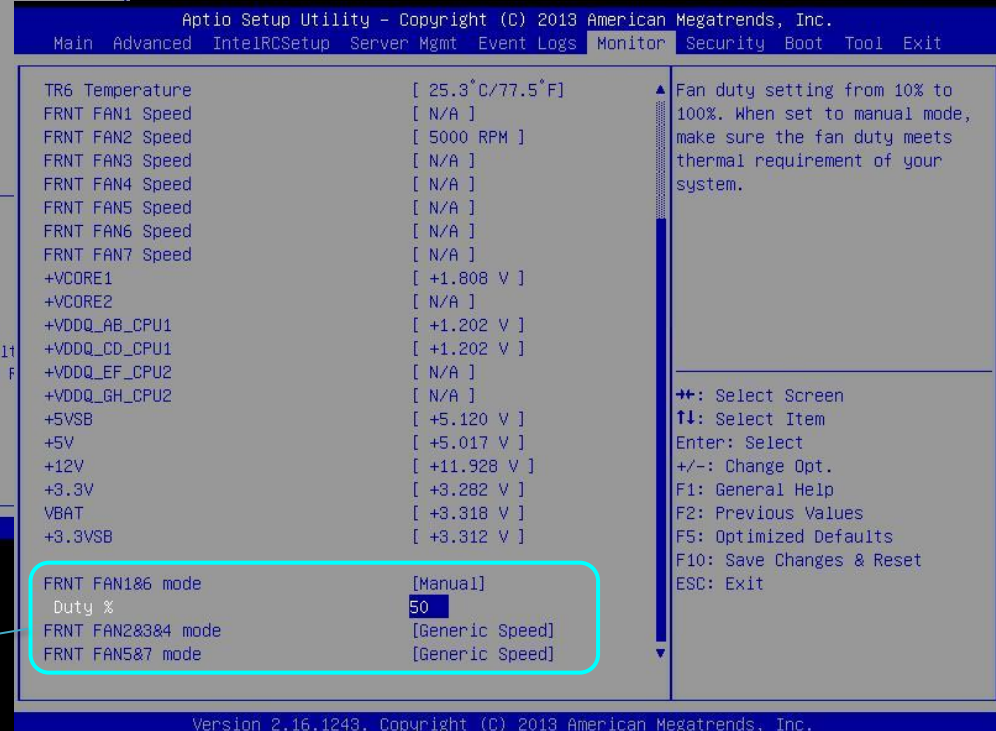
## Intelligent System FAN Control

### Smart fan:

- Intelligently adjust fan speed for CPU/GPU by needs
- Manual mode



manual mode

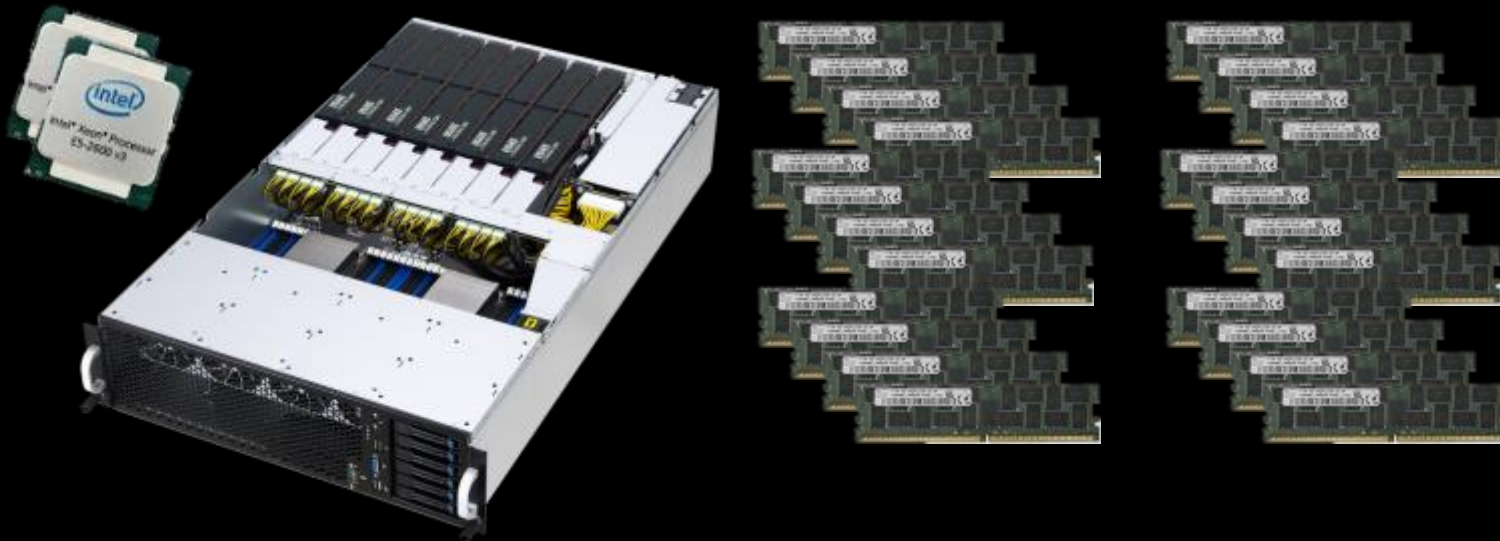


\*Consult with technical engineer

# Selling Point 4: Scalable Expansion Capability (1)

- Ultra-high density solution in 3U system

2 CPUs(up to 145W), 8 double-deck GPUs, 6 HDD Bays and 24 DIMMs

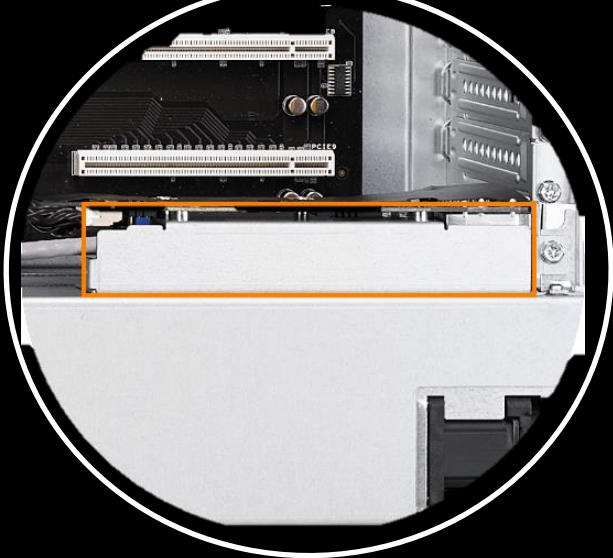
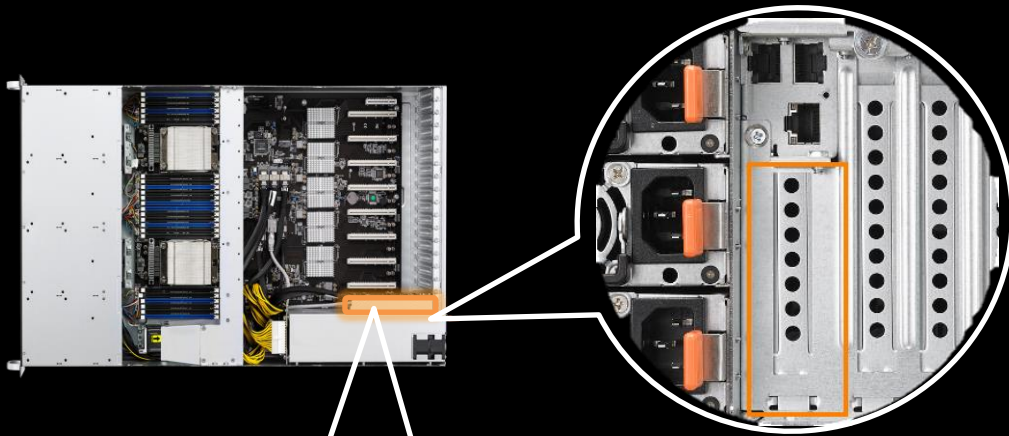


- Performance is targeted to reach at **20** TFOLPS\* per node.

\* Rmax with AMD FirePro S9150



# Selling Point 4: Scalable Expansion Capability (2)



- Flexible I/O Upgrade Kits

**PEM-FDR** 56Gbps for HPC

**PEB-10G** for VDI or enterprise scenario

**And Future High Speed Fabric**

**PIKE II** for SAS & RAID upgrade

\* Only compatible with ASUS Platform

## Selling Point 4: Scalable Expansion Capability (3)

- Support various GPGPU and accelerators
  - AMD FirePro, Intel XeonPhi, NVIDIA Tesla/GRID
  - up to **300W**



# Selling Point 5: Extreme Performance



Intel Xeon Phi Co-processor 7120P  
(MIC: Many Integrated Cores)  
Core counts up to **61 cores**  
Computing Power: >



NVIDIA: Tesla K80M  
Core counts up to **2,496 CUDA cores**  
Computing Power: > **11,190 GFLOPS**



AMD: FirePro S9150  
Core counts **2,816 stream processors**  
Computing Power: **TFLOPS**

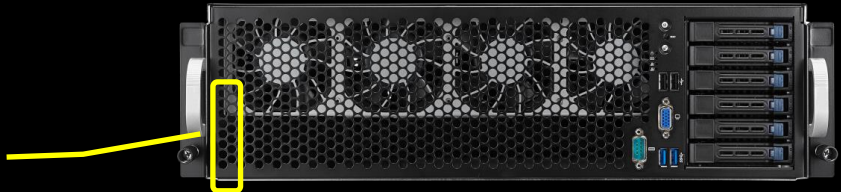


# Selling Point 5: User Friendly Design (1)

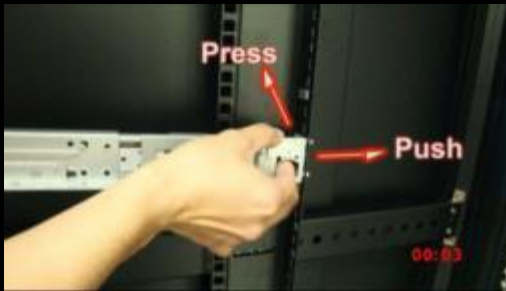
## Flexible IO design



Asset Tag



## Tool-less rail kit



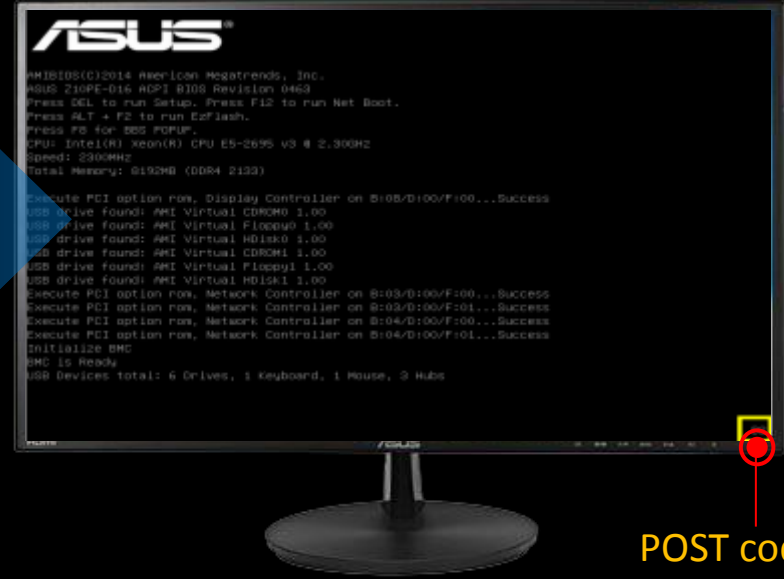
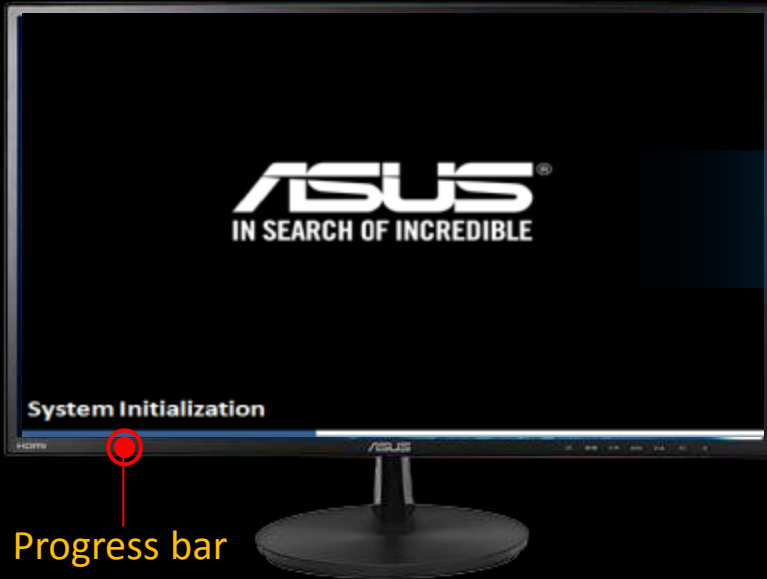
Easy Maintenance

# Selling Point 5: User Friendly Design (2)

## ■ Quick Initialization Guidance

Phase 1: POST in seconds

Phase 2: Quick Diagnosis Message



- B0
- B7
- BF
- 19
- 79
- 94
- 95
- 96

# Selling Point 6: Enhanced Remote Management (1)

- Standalone KVM/Java utility to simplify remote control process

## Before

1. Login in via webUI



2. Launch Java



3. Download Java

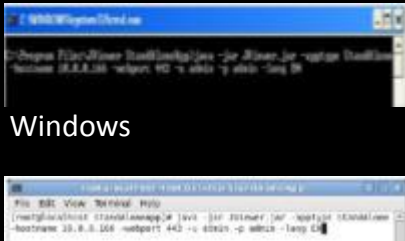


4. Console redirection



## Now..

1. Command line



Windows

Linux OS

2. Console redirection



## Simplify Remote Control Process

\* For launching JViewer application, executable jar files has to be installed on client device.

# Selling Point 6: Enhanced Remote Management (2)

## ■ Video & Picture snap shots for easily trouble-shooting

### Web GUI threshold & policy Setting

- Temperature
- Voltage
- Fan speed
- Watchdog Timer
- Date & Time
- Login Event



### BSOD capture/view

Blue screen captures for Windows Server Error analysis



### Video Recording

- Automatically triggered by events
- Motion Event Log for trouble-shooting



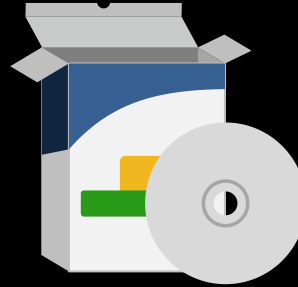
# Selling Point 6: Enhanced Remote Management (3)

## ASWM Enterprise for in-band Management

### Intuitive User Interface



### Software Dispatch



Hot fix, tools, etc.

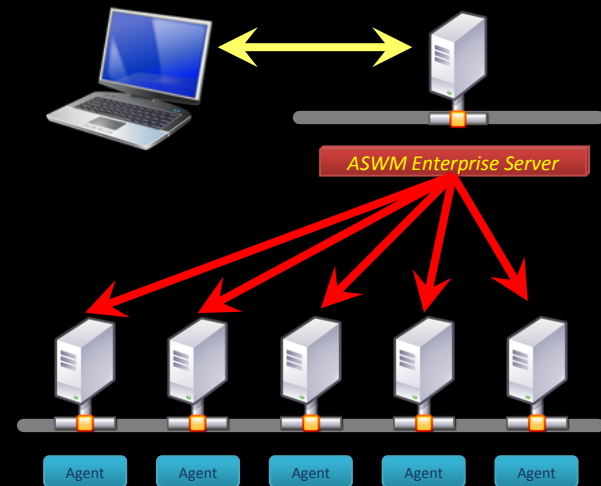
### Task Scheduler



shutdown, service, software dispatch

## 1 on Many Centralized Management

- Remotely Batch Update BIOS, Software Dispatch
- Fruitful in-band Remote Control
- Reduce maintenance workload





# ESC8000 G3 Quick Introduction



- **High Density, Hybrid Computing Power**

- Supports up to 8 double-deck GPUs in 3U
- Maximum GPU utilizations for demanding computing power

- **Optimized Thermal Design**

- Front parallel redundant fan placement
- Dedicated Air-tunnel for individual GPUs

- **Resilient & Efficient**

- Thermal backup solution
- Intelligent System FAN Control

- **Scalable Expansion Capability**

- 8 \* PCI-E Gen3 x16 slots for FH/FL add-on cards
- 1 \* PCI-E Gen3 x8 slot for FH/FL add-on cards
- 1 \* PCI-E Gen3 x8 slot for Low-profile HBA/ASUS proprietary interconnection cards

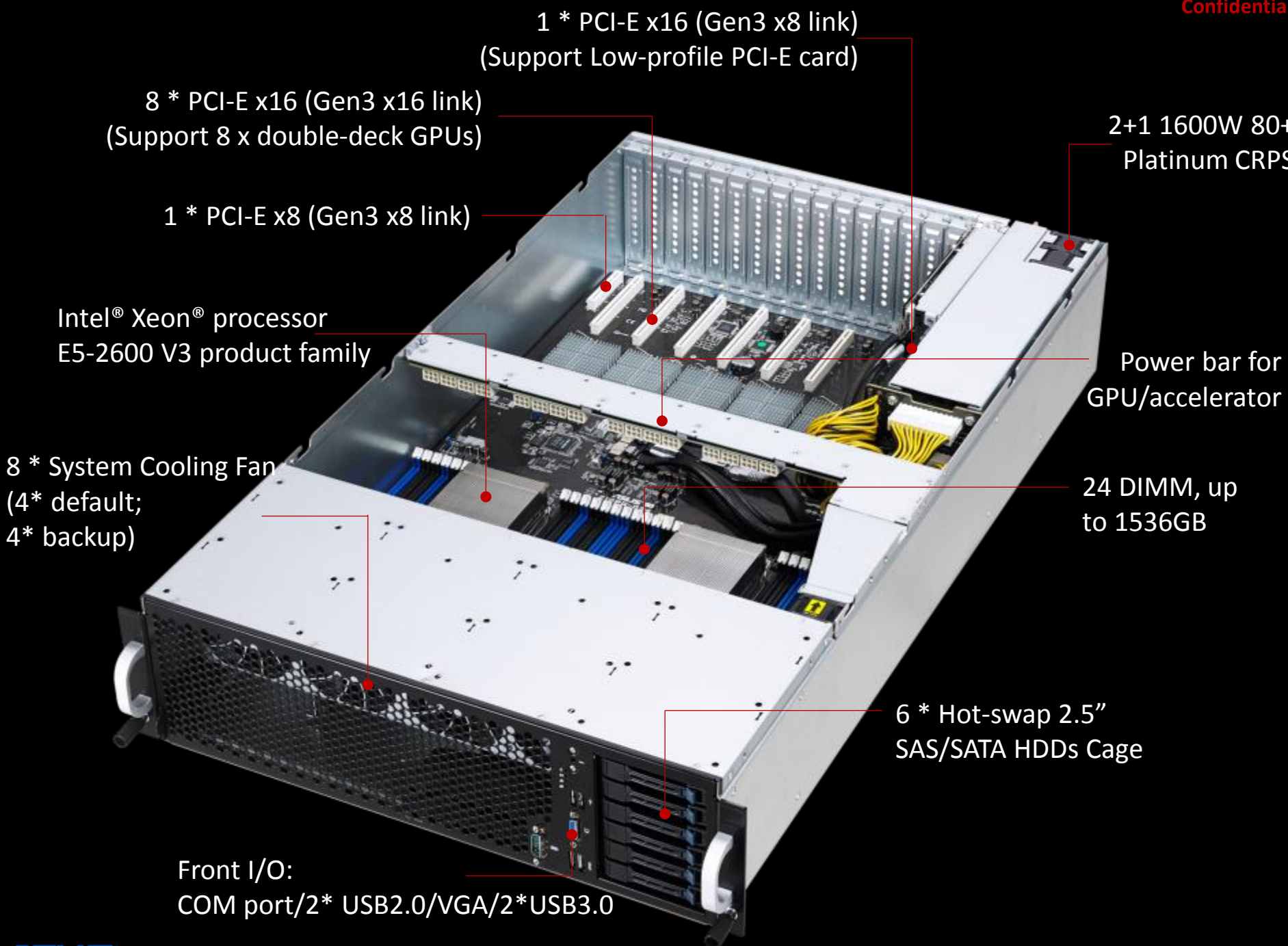
- **Flexible I/O Upgrade Kits**

- PEM-FDR
- PEM-10G
- PIKE II cards

## Target Market:

HPC, Scientific & Research, Render farm, Cloud Gaming

	ASUS ESC8000 G3
<b>Form Factor</b>	3U Rack-mount
<b>Expansion Slot</b>	- 8 * PCI-E x 16 (x16 Gen3 Link) - 1 * PCI-E x 16 (x8 Gen3 Link) - 1 * PCI-E x 8 (x8 Gen3 Link)
<b>Processor</b>	Intel® Xeon® processor E5-2600 v3 product family
<b>Memory</b>	24 x DDR4 2133 RDIMMs
<b>Chipset</b>	Intel® C612 Chipset
<b>Networking</b>	2 * I210 LAN + 1 * Mgmt LAN InfiniBand FDR/10G kit* 1 (option)
<b>HDD Bay</b>	6 * 2.5 Hot-Swap HDD/SSD Bays
<b>PSU</b>	2+1 Redundant 1600W 80Plus Platinum Level Power Supply
<b>Dimension</b>	759.4mm * 447mm * 130.6mm



1 \* PCI-E x16 (Gen3 x8 link)  
(Support Low-profile PCI-E card)

8 \* PCI-E x16 (Gen3 x16 link)  
(Support 8 x double-deck GPUs)

2+1 1600W 80+  
Platinum CRPS

1 \* PCI-E x8 (Gen3 x8 link)

Intel® Xeon® processor  
E5-2600 V3 product family

Power bar for  
GPU/accelerator

8 \* System Cooling Fan  
(4\* default;  
4\* backup)

24 DIMM, up  
to 1536GB

6 \* Hot-swap 2.5"  
SAS/SATA HDDs Cage

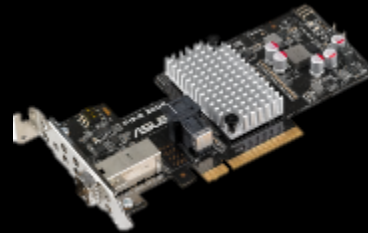
Front I/O:  
COM port/2\* USB2.0/VGA/2\*USB3.0

# Appendix

# Flexible I/O options from ASUS

## Storage HBA:

- Model: PIKE II 3008/3108 Series
- SAS upgrade kit for storage scalability



PIKE II 3008\*



PIKE II 3108\*

## Networking HBA:

- Model: PEM-FDR, PEB-10G Series
- FDR upgrade kit offers 56Gb hyper inter-connection for HPC application
- 10G upgrade kits for VDI and enterprise scenarios



PEM-FDR\*

PEB-10G/57840-2S  
PEB-10G/57811-1SPEB-10G/57840-2T  
PEB-10G/57811-1T

\* Only compatible with ASUS Platform

# GPGPU/Accelerator AVL Candidates

ESC8000 G3 Series AVL list				
AVL	Type	Vendor	Model#	Max # of GPUs
GPU card	Computing	Intel	Xeon Phi 7120P	8
GPU card	Computing	Intel	Xeon Phi 5110P	8
GPU card	Computing	Intel	Xeon Phi 3120P	8
GPU card	Computing	Intel	Xeon Phi 3110P	8
GPU card	Computing	NVIDIA	Tesla M40	8
GPU card	Computing	NVIDIA	Quadro M6000	2
GPU card	Computing	NVIDIA	GRID K1	2
GPU card	Computing	NVIDIA	GRID K2	4
GPU card	Computing	NVIDIA	Tesla M60	4
GPU card	Computing	NVIDIA	Tesla K80	8
GPU card	Computing	NVIDIA	Tesla K40M	8
GPU card	Computing	NVIDIA	Tesla K10	8
GPU card	Computing	AMD	FirePro S9150	8

\* Please access <http://www.asus.com/support> for the latest AVL.