

# BOSTON

Servers | Storage | Solutions



Powered by



*Tailor made IT  
since 1992*

ISSUE NO. 404

# CONTENTS



## 3 Boston's Services

- 3 Our Services

## 4 Boston's Partners

- 4 Our Close Partners

## 6 Solutions

- 6 Our Solutions
- 7 vScaler
- 8 Supermicro SYS-1028U-VSN011E
- 9 dataScaler-BD
- 10 Boston ANNA Series
- 11 Boston dataScaler-L SFF

## 12 Servers

- 12 Our Servers
- 13 Boston Quattro 12256-T

## 14 Storage

- 14 Our Storage
- 15 Boston Igloo Plus Ice

## 16 Workstations

- 16 Our Workstations
- 17 Boston Venom 2501-0P

## 18 Networking

- 18 Our Networking
- 19 Mellanox Quantum™ HDR Switch

## 20 Industry News

- 20 NVMe, the future of storage as we know it
- 23 What does IoT look like?

## 24 Reviews

- 24 Boston Venom 2501-0P
- 25 Boston Fenway 2004-WT
- 25 Boston Igloo 2U-60T-STOR

## 26 Stay in touch

- 26 Newsletter & Social Media

## 27 Our Partners

- 27 Our Partners



# BOSTON'S SERVICES



As one of Europe's leading system integrators, Boston Ltd. is focused on achieving customer satisfaction by delivering high quality and reliable systems using the latest technologies.

## OUR SERVICES



### CUSTOM DESIGN & CONFIGURATION

Working with one of our experienced sales managers, we will carefully design and build a system to your unique specifications.



### WORLDWIDE DELIVERY

Anytime, anywhere. Our delivery services range from timed deliveries through to out-of-business hours installations, should these be required.



### CUSTOM BUILD & TEST

In our custom designed, controlled test environment, we run our comprehensive suite of software on each and every system.



### LEASING

All of our hardware and services are available to lease. Get in touch with our sales team to discuss your requirements.



### UPGRADE, REPLACEMENT & DISPOSAL

In partnership with WeeeCare© plc and as part of the WEEE Directive, we can offer earth friendly disposal options for your clients, as and when these needs arise.



### GLOBAL SUPPORT & WARRANTY

Once you have received your new system, our after sales support team are on hand to answer any queries and provide warranty support services.

# BOSTON'S PARTNERS



At Boston we pride ourselves on building strong partner relationships with the industry's most renowned companies, ensuring we always provide our clients with first-to-market technology and award-winning solutions.

## OUR CLOSE PARTNERS



### **SUPERMICRO**

Super Micro Computer, Inc. or Supermicro (NASDAQ: SMCI) designs, develops, manufactures and sells energy-efficient, application optimised server solutions based on x86 architecture. The company's wide range of products include the industry's deepest array of server, high-end workstation and storage systems as well as energy efficient server components, called Server Building Blocks Solutions, that include serverboards, chassis and power supplies; Supermicro's powerful Universal I/O (UIO) expansion card technology, and other system accessories.

*Server Solutions, Blade Solutions, Storage Solutions & Components*



### **MELLANOX**

Mellanox Technologies is a leading supplier of end-to-end InfiniBand and Ethernet interconnect solutions and services for servers and storage. Mellanox interconnect solutions increase data centre efficiency by providing the highest throughput and lowest latency, delivering data faster to applications and unlocking system performance capability.

*Network Adapters, Switches, Gateway Products, Cables & Accessories*

---

**“** *By collaborating with key partners we are able to utilise skills and knowledge ensuring that our tailor-made solutions are of the highest quality.* **”**

*- Manoj Nayee, Managing Director of Boston Limited*

---



#### **NVIDIA**

NVIDIA (NASDAQ: NVDA) is the world leader in visual computing technologies and the inventor of the GPU, a high-performance processor which generates exceptional, interactive graphics on workstations, personal computers, game consoles, and mobile devices. NVIDIA serves the professional design and visualisation market with its Quadro products and the high-performance computing market with its Tesla products. NVIDIA GRID solutions accelerate virtual desktops and applications, allowing the enterprise IT to deliver true graphics from the data centre to any user on the network.

### *Graphics Cards & GPU Accelerators*



#### **INTEL**

Intel is one of the world's largest and highest valued chip makers. It is the inventor of the x86 series of microprocessors, the processors found in most computers. Intel also makes motherboard chipsets, network interface controllers and integrated circuits, flash memory, graphics chips, embedded processors and other devices related to communications and computing.

### *Processors, Network Controllers & SSDs*

# SOLUTIONS



We assist the creation of your ideal solution - customising the specification, design and even branding - helping you solve your toughest business challenges simply and effectively.

## OUR SOLUTIONS



### CLOUD

Boston have a range of network attached file systems and scale out NAS solutions with all the features your enterprise would need.



### CONVERGED INFRASTRUCTURE

Select the right backend block device storage for your tailor-made solution.



### BIG DATA

Scale out parallel file systems and high performance computing storage systems.



### HPC

We can provision all flash, hyper-converged appliances at a fraction of the cost of our competitors, as well as a broad range of virtualised storage solutions.



### ENTERPRISE

Not just any bunch of disks, Boston tackle the latest hardware limitations with these top of the range storage solutions.



### VDI

Have a specific solution in mind? Get in touch and Boston will tailor make your solution to fit your exact requirements.



## FEATURED CLOUD SOLUTION:

### vSCALER

Item #VX240-H | VX220-BD | VX210-C

vScaler simplifies data centre infrastructure by integrating compute, storage and networking resources into a converged platform that is capable of running any application, at any scale.

vScaler enables agile sys-admin teams to quickly deploy scalable, production-ready private cloud environments/big data analytical platforms and traditional HPC clusters all under one management portal.



### SAMPLE SPECIFICATIONS

VX240-H	VX220-BD	VX210-C
Form Factor: 2U Rackmount	Form Factor: 2U Rackmount	Form Factor: 2U Rackmount
CPU: Dual Intel® Processor E5-2640 v4 (20 Core)	CPU: Dual Intel® Processor E5-2650 v4 (24 Core)	CPU: Dual Intel® Processor E5-2680 v4 (28 Core)
Memory: 128GB	Memory: 256GB	Memory: 512GB
Interconnect: EDR/FDR/QDR Infini-band	Interconnect: EDR/FDR/QDR Infini-band	Interconnect: EDR/FDR/QDR Infini-band
Disk: 480GB SSD or 1TB HDD	Disk: 2x 480GB SSD or 6TB HDD	Disk: 2x 800GB SSD or 6TB HDD

*Turn-key, cloud-bursting, production-ready*

### INTERESTED?

vScaler has been engineered by a team of HPC, Finance, Broadcast & Media experts to bring a finely tuned, application specific, cloud platform to the market. Choose a package that best suits your needs, be it public, private or hybrid cloud. Alternatively contact us to discuss a customised solution.

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's 'Cloud in a flash', powered by vScaler.

## FEATURED VSAN SOLUTION:

### Supermicro SYS-1028U-VSN011E Complete System

Item #SYS-1028U-VSN011E

Supermicro's Virtual SAN (VSAN) Ready Nodes focus on deploying VMware Virtual SAN, a hyper-converged solution, as quickly as possible. Virtual SAN provides you with the ability to provision and manage compute, network and storage resources from a single pane of management. Working with VMware, Supermicro delivers an alternative to traditional Fiber Channel SAN based virtualization infrastructure, which is known for its complexity and interoperability challenges.



#### SAMPLE SPECIFICATIONS:

Form Factor:	1U Rackmount
CPU:	2x Intel® Xeon® Processor E5-2630 v3
Memory:	128GB DDR-4 Registered ECC 2133MHz
Interconnect:	2x 10GbE Base-T 4x 1GbE Base-T
Disk:	4TB Raw Capacity (4x 1 TB HDDs, 1x 200GB Caching SSD)

#### *VMWare VSAN HY-4 Profile Ready*

#### INTERESTED?

Our Supermicro based hyper-converged solution is fully integrated in our own labs facility and comes ready to rack in capacities and performance profiles of your choice. Just choose what you need from our range of pre-validated platforms and let Boston take care of the rest.

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's hyper-converged appliance.

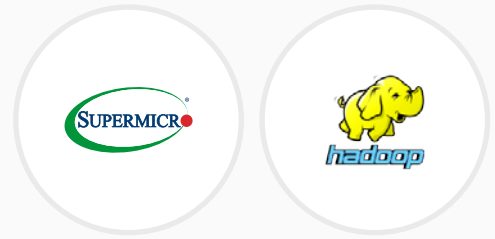


## FEATURED BIG DATA SOLUTION:

### dataScaler-BD

Item #dataScaler-BD

Utilising big data analytics is no longer a question of when, but how. Enterprises deploying Hadoop solutions need a high performance, scalable and reliable infrastructure that can expend a large amount of resource searching for the best architecture and the most capable solution provider. Supermicro Hadoop Solutions are certified server, storage, networking, software and service configurations that take the guess work out of designing and deploying a truly scalable big data infrastructure.



### SAMPLE SPECIFICATIONS

dataScaler-BD8	dataScaler-BD16	dataScaler-BD90
<b>Form Factor:</b> 4U Rackmount	<b>Form Factor:</b> 2U Rackmount	<b>Form Factor:</b> 4U Rackmount
<b>CPU:</b> Up to 2 Intel® Xeon® Processor E5-2600 v4	<b>CPU:</b> Dual Intel® Xeon® Processor E5-2600 v4	<b>CPU:</b> Not Applicable
<b>Memory:</b> Up to 2TB DDR4 2400MHz ECC memory	<b>Memory:</b> Up to 1TB DDR4 2133MHz ECC memory	<b>Memory:</b> Not Applicable
<b>Interconnect:</b> 2x 1GbE ports per node	<b>Interconnect:</b> Dual 10GBase-T LAN w/ Intel X540	<b>Interconnect:</b> 8x External Mini SAS HD 12Gb/s Ports
<b>Disk:</b> 6 + 2x 3.5"/2.5" SATA3 Hot Plug Disk Bays	<b>Disk:</b> 16x 3.5" Hot-swap drive bays:	<b>Disk:</b> Up to 90 x 3.5" or 2.5" SAS3 HDD/SSD

*High performance, scalable and reliable*

### INTERESTED?

Boston has a range of solutions optimised for Hadoop - an open-source software framework for storing data and running applications on clusters of commodity hardware.

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's Big Data range.

## FEATURED GPU SOLUTION:

### BOSTON ANNA SERIES

The Boston ANNA series includes the world's first 1U Pascal server. Boston ANNA GPU servers support NVIDIA® Tesla® P100 GPUs & beyond.

The revolutionary NVIDIA® Pascal™ architecture is purpose-built to be the engine of computers that learn, see, and simulate our world—making it the perfect GPU backbone for the ANNA series. A liquid cooled edition of the Boston ANNA Pascal is featured in the ISC17 Student Cluster Competition, in partnership with Edinburgh University EPCC.

#### SAMPLE SPECIFICATIONS:

##### ANNA PASCAL

**Form Factor:** 1U Rackmount

**CPU:** Dual Intel® Xeon® Processor E5-2600 v4

**Memory:** 16x DDR-4 Registered ECC 2400MHz

**GPU:** 4x NVIDIA® Tesla® P100 SXM2 with NVLink

**Disk:** 2x 2.5" Hot swap SATA3 bays

##### ANNA PASCAL XL

**Form Factor:** 4U Rackmount

**CPU:** Dual Intel® Xeon® Processor E5-2600 v4

**Memory:** 24x DDR-4 Registered ECC 2400MHz

**GPU:** 8x NVIDIA® Tesla® P100 SXM2 with NVLink

**Disk:** 16x 2.5" Hot swap SATA/SAS bays



*The World's fastest deep learning appliances*

#### INTERESTED?

Boston's industry leading server is a masterclass of server design and innovation, creating a streamlined architecture which eliminates complex cabling and GPU pre-heat for maximum airflow, cooling and performance-per-watt.

Get in touch today to find out more about our broad range of GPU solutions.

## FEATURED ENTERPRISE SOLUTION:

### BOSTON DATASCALER-L SFF

Boston's dataScaler-L SFF (small form factor) appliance is the latest addition to Boston's Lustre based parallel file system portfolio and provides a lower cost / capacity entry point for Lustre storage systems. Traditional Lustre solutions on the market are focused on addressing the high end cluster users, while the Boston Lustre SFF is designed for small or mid-sized clusters with capacities as low as 18TB (and scaling to 720TB). This solution provides a high performance alternative to standard NFS and provides customers with the option to scale and grow as the cluster and user demands increase over time.



#### SAMPLE SPECIFICATIONS:

**Form Factor:** 4U Rackmount

**CPU:** 4 x Intel® Xeon® Processor E5-2667 v4

**Memory:** 32GB DDR4 DIMMs

**Data Disks:** 22x 6TB SAS3 HDDs

**Metadata Disks:** 2x 2TB SAS3 SSDs

**Interconnect:** Intel's OPA or Mellanox EDR

*An easy-to-deploy Lustre building block for SDDC*

#### INTERESTED?

Boston and our partners have a range of expertise and hardware on hand to cater for all aspects of enterprise solutions. Our enterprise server range represents the very best in Boston's high performance, mission critical servers; leveraging decades of quality and innovation in terms of hardware design and build quality. Get in touch today and avail of Boston's Big Data range.



# SERVERS



Working in close partnership with Supermicro, Boston offer a range of high performance, enterprise-grade servers.

## OUR SERVERS



### RACKMOUNT

View our range of rackmount servers available in various form factors from 1U to 6U blade, all of which can be tailored to your requirements.



### STORAGE

Our storage servers have been designed from the ground up to meet the ever increasing demands of today's data centre.



### HIGH DENSITY

Optimise your data centre space with these high density, customisable solutions.



### TOWER SERVERS

View our selection of tower servers from the Boston and Supermicro product ranges.



### GPU SERVERS

Accelerate your server application performance with our range of GPU solutions.



### BLADE SERVERS

View our range of revolutionary blade solutions optimised for a wide array of mission-critical and compute-intensive applications.

## FEATURED SERVER:

### BOSTON QUATTRO 12256-T

Item #BOS-QK1-12256-T

Boston Limited's latest 2U Quattro server featuring the latest generation Intel® Xeon Phi™ processor (formerly codenamed Knights Landing) is designed with parallelism and vectorised workloads in mind. Intel's 2nd generation Intel® Xeon Phi™ product Family, delivers massive thread parallel-ism, data parallelism and memory bandwidth – with improved single-thread performance and Intel® Xeon® processor binary-compatibility in a standard CPU form factor.



## SAMPLE SPECIFICATIONS:

**Form Factor:** 2U Rackmount

**CPU:** Intel® Xeon Phi™ 7230

**Memory:** 192GB

**Network:** Intel® i350 Dual Port Gigabit Ethernet

Supports 10BASE-T, 100BASE-TX, and 1000BASE-T, RJ45 output

**Disk:** 3x 3.5" Hot swap SATA

*High Performance, Massive Parallelism, Low Latency*

## INTERESTED?

Boston has a range of optimised, high performance, enterprise grade servers which can be customised to your exact requirements.

Our team are ready to answer any questions you may have about this server. Get in touch today and avail of Boston's 25 years of experience in enterprise grade server solutions.

# STORAGE



Whether you're in the market for a simple NAS box or a rackmount Fiber channel SAN, we can help you find the right storage solution to meet your requirements.

## OUR STORAGE



### NETWORK ATTACHED (NAS)

Boston have a range of network attached file systems and scale out NAS solutions with all the features your enterprise would need.



### STORAGE AREA NETWORK (SAN)

Select the right back-end block device storage for your tailor made solution



### SCALE-OUT AND HPC

Scale-out parallel file systems and high performance computing storage systems.



### HYPER-CONVERGED & VIRTUALISED

We can provision all-flash, hyper-converged appliances at a fraction of the cost of our competitors, as well as a broad range of virtualised storage solutions.



### JBOD

Not just any bunch of disks, Boston tackles the latest hardware limitations with these top of the range storage solutions.



### CUSTOM SOLUTIONS

Have a specific storage solution in mind? Get in touch and Boston will tailor make your solution to fit your exact requirements.



## FEATURED STORAGE SOLUTION:

### IGLOO PLUS ICE

Item #BOS-IX9-1105-FIF

In partnership with AcceleStor, the software-defined all-flash array provider, Boston brings to the market a true high availability storage appliance, the Igloo Plus - Ice. A 2U self-contained rack-mount converged storage solution featuring up to 600,000 sustained IOPS performance, the Igloo Plus - Ice provides 5.8TB usable storage capacity and four high-speed 10GbE interfaces in a turnkey appliance. This makes the Igloo Plus - Ice a perfect fit for all mission-critical requirements, enterprise and industry applications; especially databases and online transaction processing (OLTP).



### SAMPLE SPECIFICATIONS:

<b>Form Factor:</b>	2U Rackmount
<b>CPU:</b>	Intel® Xeon® Processor E5-2650 V4
<b>Memory:</b>	Up to 1TB ECC DDR4 SDRAM
<b>Network:</b>	4x 10GbE SFP+ (2x 10GbE SFP+ per node)
<b>Disk:</b>	19.2TB Total SSD capacity (5.8TB usable capacity)

*High availability all flash iSCSI SAN*

### INTERESTED?

Boston and our partners have a range of expertise and hardware on hand to cater for all aspects of your storage requirements.

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's customised storage solutions.

# WORKSTATIONS



Boston offers a wide range of competitively-priced, high-performance workstations, ranging from single-processor compact desktops all the way up to fully-immersed liquid-cooled pre-overclocked powerhouses.

## OUR WORKSTATIONS



### HOME AND GAMING

Our range of workstations are designed with you in mind, whether it's for standard home use or high end gaming, we have the perfect solution for you.



### OFFICE AND ENTERPRISE

If you require a mission critical computing solution that provides unrivalled levels of performance, then Boston have the perfect enterprise solutions for you.



### PROFESSIONAL GRAPHICS AND VIDEO EDITING

We offer a complete range of liquid-cooled, GPU-accelerated workstations designed specifically to cater for the ever increasing demands within the Media & Entertainment arena.



### SCIENTIFIC AND HPC

High performance workstations and personal supercomputers for HPC applications – GPU and MIC ready to help you build, test and analyse even the most complex of scientific theorem.

## FEATURED WORKSTATION:

### BOSTON VENOM 2501-0P

Item #BOS-VX0-2501-0P

The Boston Venom 2501-0P is designed to be the perfect companion for all design, VFX and digital content professionals.

Our latest generation high-performance workstation 2501-0P is readily equipped to handle the most intensive applications across many professional industries - helping researchers, analysts, engineers and digital effects artists do their jobs faster, more efficiently, and with better results.



## SAMPLE SPECIFICATIONS:

- Form Factor:** Mid-Tower Workstation
- CPU:** Intel® Xeon® Processor E5-2690 v4
- Memory:** 128GB DDR4 Reg ECC 2400MHz – 4 Channels per CPU
- Network:** Dual Gigabit Ethernet LAN ports via Intel i210
- Disk:** 2x 2TB SATA HDDs in RAID 0/1

*High performance, liquid cooled system*

## INTERESTED?

According to ZDNet, "Workstation vendors generally follow Intel's lead and refresh their products every time a new processor gets launched. An example is Boston's new Venom workstation, the 2501-0P, which sports the latest Xeon E5-2600 v4 processors along with faster 2,400MHz DDR4 RAM. But that's not its only claim to fame, and there's a lot more under the hood to make workstation buyers sit up and take notice of what the 2501-0P has to offer."

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's wide range of high performance workstations.



# NETWORKING



Thanks to close partnerships with Supermicro, Intel and Mellanox, Boston have a vast array of networking solutions to suit any requirements.

## OUR NETWORKING



### SWITCHES

Boston have a broad range of switches designed for performance, serviceability, energy efficiency and high-availability.



### ADAPTORS

We stock single and dual port network adaptors from Mellanox, Intel and Supermicro.



### CABLING

InfiniBand, Ethernet, Passive or Active - we have a multitude of network cabling products.



## FEATURED NETWORKING SOLUTION:



### MELLANOX QUANTUM™ HDR SWITCH

Item #QM8700

Built with Mellanox's Quantum InfiniBand switch device, the QM8700 provides up to forty 200Gb/s ports, with full bi-directional bandwidth per port. The QM8700 is the world's smartest network switch, designed to enable in-network computing through the Co-Design SHARP (Scalable Hierarchical Aggregation and Reduction Protocol) technology. The Quantum switch improves the performance of selected collective operations by processing the data as it traverses the network, eliminating the need to send data multiple times between end-points.



#### KEY FEATURES:

##### PERFORMANCE

- 40 X HDR 200Gb/s ports in a 1U switch
- 80 X HDR100 100Gb/s ports (using splitter cables)
- 16Tb/s aggregate switch throughput
- Sub-90ns switch latency

##### ADVANCED DESIGN

- Adaptive Routing
- Congestion Control
- Collective offloads (SHARP)
- VL mapping (VL2VL)

##### OPTIMIZED DESIGN

- 1+1 redundant & hot-swappable power
- N+1 redundant & hot-swappable fans
- 80 gold+ and energy star certified power supplies
- x86 ComEx Broadwell CPU

*The World's Smartest Switch*

#### INTERESTED?

The QM8700 together with Mellanox ConnectX®-6 adapter card support HDR100. By utilizing two pairs of two lanes per port, the QM8700 can support up to 80 ports of 100G to create the densest TOR switch available in the market.

Our team are ready to answer any questions you may have about this solution. Get in touch today and avail of Boston's vast networking solution

# INDUSTRY NEWS



## THE FUTURE OF STORAGE AS WE KNOW IT



Originally released as a version 1 specification by the NVM Express Work Group in March 2011 and through several minor revisions since, NVMe has gone from conception to maturity and is now tipped to be one of the most important storage technologies for both server and client computing in the coming decade and beyond.

A collaboration between key industry players including Cisco, Dell, EMC, Intel, Micron, Microsemi, Microsoft, NetApp, Oracle, Samsung, Seagate and Western Digital, NVMe as a technology has had both the input and the backing necessary to make it the de-facto high performance storage interface of today, with great foundations of becoming used as mainstream storage for future deployments.

### WHAT EXACTLY IS NVMe?

Non-Volatile Memory Express (or NVMe) is a collection of open standards which can be used to design and implement non-volatile memory products.

It's been specifically designed to deliver high bandwidth, low latency access to storage devices over a PCI-Express interface.

That's not all, however, the standard defines both the interface, command set and goes further to define management and implementation of NVMe over scalable fabrics, giving potential to finally rival Fibre Channel, or SCSI /SAS protocol in a SAN environment.

### THE THREE DEFINITIONS ARE AS BELOW:

- NVM Express – The register interface and command set for PCI Express attached storage with industry standard software available for numerous operating systems. NVMe is widely considered the defacto industry standard for PCIe SSDs.
- NVMe Management Interface-The command set and architecture for out of band management of NVM Express storage (e.g., discovering, monitoring, and updating NVMe devices using a BMC).
- NVMe over Fabrics – The extension to NVM Express that enables tunnelling the NVM Express command set over additional transports beyond PCIe. NVMe over Fabrics extends the benefits of efficient storage architecture at scale in the world's largest data centres by allowing the same protocol to extend over various networked interfaces.



These standards are important to help unify the industry in their efforts, avoiding the generation of multiple different and possibly propriety designs becoming common, fragmenting the market, and causing consumer confusion.

Additionally, having a standard NVMe I/O stack, means that most operating systems can include an NVMe driver which is compatible with drives from a variety of different vendors directly in their distribution – in fact Windows Server 2012 R2, Windows Server 2016 and Linux distributions with a kernel of 3.3 or greater are NVMe ready today. These operating systems should provide at least the basic operating level of functionality without having to install a vendors own third party code, which was previously necessary for practically all PCI-E based flash devices that came before the NVMe standard.

#### WHAT DOES IT LOOK LIKE?

Today implementations of NVMe are as available as low profile x4 or x8 PCI-Express based SSDs, PCI-Express x4 U.2 (2.5" / SFF) devices or as M.2 embedded devices.



*An Intel P3700 PCI-Express x4 NVMe device*

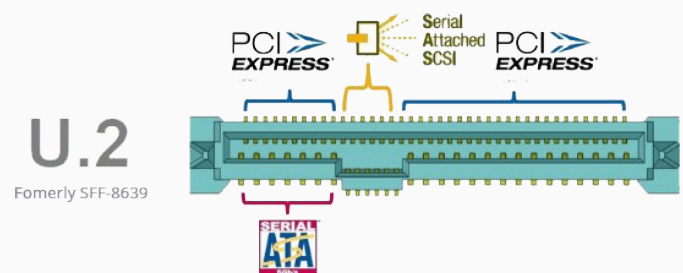
The standard PCI-Express x4 or x8 add in card form factor's main advantage is that it has compatibility with legacy systems which doesn't include a U.2 form factor slot and enables them to take advantages of NVMe's enhanced performance and standardised stack design.

It works just as well with regards to performance, and has the potential to be faster when PCI-Express x8 is utilised, but it's really U.2 that really makes NVMe interesting for server deployments.



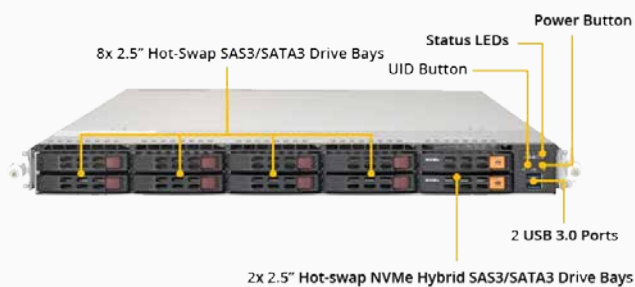
*An Intel D3700 U.2 Form Factor NVMe device*

Firstly, you'll notice that U.2 is actually using the same 2.5" form factor and a similar connector style as existing SAS / SATA devices. This is very useful for system designers as it means that they can build in "hybrid" 2.5" bays to support both types of device depending on the controller being used.



*The anatomy of a U.2 connector*

Supermicro for example have systems with 10x SAS/S-ATA bays, with 2 of those bays designated as NVMe ready, denoted by the orange release tab.



*A Supermicro 1U Ultra series server with hybrid NVMe U.2 slots*



Additionally, U.2 devices support simple hot plug support when coupled with the right controller and operating system, but note that not all implementations support hot plug so be cautious before pulling drives without notice. Standard internal PCI-Express x4 add-in cards don't typically support hot plug at all, although it is technically possible when carefully designed and executed. With the clumsy add-in card installation and traditional screw to fix them in place, add in cards certainly don't lend themselves to this application nearly as well as the U.2 does.

Finally, U.2 also supports splitting the PCI-Express x4 connector on the device to two PCI-Express x2 connectors, effectively making a dual port device. This requires explicit support from the drive though, and this is currently limited to just a few models on the market which have been designed with dual port in mind.

Dual port is useful for applications where drives could be shared between systems for the purposes of failover. This kind of implementation is already common with Fibre Channel and SAS devices, and is used where high availability is important for the system design.

Supermicro have a storage centric platform based around this concept using the storage bridge bay (SBB) platform of two x86 based servers, in one enclosure, sharing an NVMe dual port hot plug backplane.

Such types of shared disk implementations work well with failover clustering configurations which use software disk pooling, such as Windows Storage Spaces or ZFS. Using these technologies together, a high availability, yet high performance all flash storage array, or hyper converged storage and virtualisation application becomes a real possibility. You will find implementations based on this exact architecture in our upcoming Igloo generation of SAN and NAS devices.



Scan the above QR Code to continue reading the article online.



## WHAT DOES IOT LOOK LIKE?

Quite simply, IoT refers to a series of connected devices that in simple terms collect and share data; but that's where the simplicity ends. IoT has enormous possibilities and implementations as the human race relies on the digital world to co-ordinate and regulate their everyday physical lives. But what do these devices look like?

As a close partner of Supermicro, we offer the E100-8Q IoT small form factor as both a development kit for new projects and as gateway for mass deployment. It's a low power, small form factor device with an embedded processor which is designed to handle the varied operating environments where IoT might be used.

### SUPERMICRO IOT GATEWAY SOLUTIONS

Item #SYS-E100-8Q | SYS-E200-8B

Supermicro IoT Gateways are compact, smart and secure products that reside on the edge of the network, connecting smart sensors and devices to the cloud over wireless or local networks (ex. LAN, WiFi, 3G, Zigbee and RF). The IoT gateways are built on open architecture to ensure interoperability between systems, for ease of services deployment, and enable a broad ecosystem of solution providers.

Gateway solutions help ensure that data generated by devices can travel securely and safely from the edge to the cloud and back – without replacing existing infrastructure.



SYS-E100-8Q



**CPU:** Intel® Quark™ SoC X1021  
(CPU TDP support 2.2W)

**Memory:** 512GB

**Memory Type:** ECC DDR3

**Expansion Slots:** 2x Mini-PCI-E slots



SYS-E200-8B



**CPU:** Intel® Celeron® Processor J1900

**Memory:** 8GB (Maximum)

**Memory Type:** DDR3 SO-DIMM, 204-pin gold-plated DIMMs

**Expansion Slots:** 1x mini-PCIe slot  
1x mSATA slot (SATA 2.0)

*Supermicro's IoT Gateways, compact, feature rich and suitable for all applications*

# REVIEWS



Boston is proud to have its world class solutions tried and tested by some of the industry's most esteemed reviewers. Get in touch today to take any of our solutions for a test drive in our very own labs facility.

## RECENT REVIEWS

### BOSTON VENOM 2501-0P

The Broadwell generation of microarchitecture finally made it to the mainstream Xeon E5 processor platform at the beginning of the year. Boasting up to 22 cores per socket, it's been unleashing a huge leap in power ever since –

and Boston has taken full advantage with the Venom 2501-0P workstation, offering the full range of options in a dual-socket configuration.

FULL SPECS ON PAGE 17

#### Verdict

*"The Boston Venom combines great modelling with exemplary rendering ability and potent storage."*

**Date:** December 2016

**Price:** £5,995.00 ex VAT

**Written by:** James Morris

**Score:** ★★★★★



*If you want a beast of a machine...take a look at this*

Visit our website to find our more information on our latest reviews : [www.boston.co.uk/reviews/](http://www.boston.co.uk/reviews/)



## BOSTON QUATTRO 12256-T

The Boston Quattro 12256-T, and Intel's Xeon Phi in general, is not your everyday Xeon server. Where it scores best is in handling workloads that can be broken down into multiple processing streams and spread across hundreds or

thousands of cores in parallel. Workloads such as DNA sequencing, for example, or deep learning, big data analytics and complex modelling.

FULL SPECS ON PAGE 13

### Verdict

*"Designed to build highly scalable processing clusters containing tens of thousands of nodes to handle massively parallel workloads."*

**Date:** 15th February 2017

**Price:** £17,707.00 ex VAT

**Written by:** Alan Stevens

**Score:** ★★★★★

9/10 Outstanding



*A practical platform to exploit the capabilities of Intel's latest Xeon Phi processors, which are already proving popular with HPC customers worldwide.*

## BOSTON IGLOO 2U-60T-STOR

SMBs that want choice for their storage networks will like Boston's Igloo as it amalgamates NAS, IP SAN and FC SAN services into a single appliance. What's more, it delivers a very high storage

capacity for the price and has more than a few innovative touches.

VISIT [BOSTON.CO.UK](http://BOSTON.CO.UK) FOR MORE INFORMATION

### Verdict

*"Boston's combination of hardware and Open-E DSS makes for an affordable, high capacity storage appliance that supports NAS, IP SAN and FC SAN operations out of the box"*

**Date:** 13th July 2016

**Price:** £7,999.00 ex VAT

**Written by:** Dave Mitchell

**Score:** ★★★★★



*Unsurprisingly, the 2501-OP's performance is incredible in every area*

# STAY IN TOUCH



## NEWSLETTER

By signing-up for Boston e-mail updates you are ensuring that you'll never miss the latest offers, whitepapers, new product announcements and news from within Boston, Boston Labs and our High Performance Computing (HPC) division.

It's easy and only takes a few moments. Scan the QR code below to join.



- Special offers and promotions
- Cutting-edge technology from Boston
- Relevant tips, tricks and trends
- Latest marketing news, reviews and updates
- Exciting articles

## FOLLOW US

We're active across social media, stay connected and follow Boston on Twitter, Facebook, LinkedIn, and YouTube.



[TWITTER.COM/\*\*BOSTONLIMITED\*\*](https://twitter.com/BOSTONLIMITED)



[FACEBOOK.COM/\*\*BOSTONLIMITED\*\*](https://facebook.com/BOSTONLIMITED)



[LINKEDIN.COM/COMPANY/\*\*BOSTON-LIMITED\*\*](https://linkedin.com/company/BOSTON-LIMITED)



[YOUTUBE.COM/USER/\*\*BOSTONLIMITED\*\*](https://youtube.com/user/BOSTONLIMITED)

# OUR PARTNERS





Servers | Storage | Solutions

**UK**

**(Headquarters)**

+44 (0) 1727 876 100

[sales@boston.co.uk](mailto:sales@boston.co.uk)

[www.boston.co.uk](http://www.boston.co.uk)

**Germany**

+49 (0) 89 9090 199-3

[sales@boston-it.de](mailto:sales@boston-it.de)

[www.boston-it.de](http://www.boston-it.de)

**India**

+91 22 4090 7106 (Mumbai office)

+91 80 4308 4000 (Bangalore office)

[sales@bostonindia.in](mailto:sales@bostonindia.in)

[www.bostonindia.in](http://www.bostonindia.in)

[www.boston.co.uk](http://www.boston.co.uk)

© Boston Limited  
Errors & Omissions Excepted