

the

# Boston

Bugle



celebrating  
**45**  
Est. 1992 years

**25TH ANNIVERSARY ISSUE**

# CONTENTS



## 3 Boston's Services

3 Our Services

## 4 Boston's Partners

4 Our Close Partners

## 6 Solutions

6 Our Solutions

7 Featured Cloud Solution

9 Featured S2D Solution

10 Featured GPU Solution

11 Featured Lustre\* Solution

## 12 Servers

12 Our Servers

13 Boston Fenway 2164-0T

14 Boston Fenway 2144-0T

15 Boston Quattro 12256-T

## 16 Storage

16 Our Storage

17 Boston Igloo Plus Ice

18 Boston Igloo SBB Jovian 4U-20T-Stor

19 Boston Igloo Nexenta 4U-20T-Stor

20 Boston Flash-IO Talyn

21 Boston Fenway 2124-VT

## 22 Workstations

22 Our Workstations

23 Boston Venom EPYC™ Workstation

## 24 Networking

24 Our Networking

25 Mellanox Quantum™ HDR Switch

26 Solarflare 4000 series Solarcapture

27 Mellanox Ethernet Switch SN2100

## 28 Industry News

28 AMD® EPYC™ - A Long Awaited x86 Alternative

30 Do You Know Your Intel® Xeon® Processor Scalable Family?

31 Introducing Volta

## 32 Reviews

32 Boston Venom 2501-0P

33 Boston Quattro 12256-T

33 Boston Igloo 2U-60T-STOR

## 34 Stay in touch

34 Newsletter & Social Media

## 35 Our Partners

35 Our Partners

# BOSTON'S SERVICES



Welcome to the 25th Anniversary edition of the Boston Brochure. Established in 1992, and growing to be one of Europe's leading system integrators, Boston Ltd. is focused on achieving customer satisfaction by delivering high quality and reliable solutions using the latest technologies.

## OUR SERVICES



### CUSTOM DESIGN & CONFIGURATION

Working with one of our experienced sales team, 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.

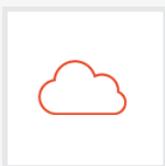
## Processors, Network Controllers & SSDs

# 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 bring the power of the Cloud to the enterprise with our range of fully integrated, high performance Cloud-based solutions.



### CONVERGED INFRASTRUCTURE

Select the right solutions from a variety of all flash, hyperconverged appliances, to converged HPC, Big Data & Cloud platforms.



### BIG DATA

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



### HIGH PERFORMANCE COMPUTING

Our award winning HPC solutions utilise the most innovative components on the market and are tested at our world-class Boston Labs facility.



### ENTERPRISE

Here to meet your mission critical solution needs, our enterprise range represents the very best in high performance computing.



### VDI

Boston and our Partners have a range of expertise and hardware on hand to cater for all aspects of Desktop Virtualisation.

## FEATURED CLOUD SOLUTION:

### vSCALER

vScaler is a private Cloud platform that enables the customer to implement a secure, scalable and flexible IT infrastructure enhancing transformation and creating operational efficiency and true business benefit.

vScaler allows you to provision full HPC-on-Demand clusters, Big Data analytics, accelerated GPU compute (for Machine Learning), tiered and accelerated storage platforms, we work with our clients to optimise their infrastructure (hardware and network) to allow their desired applications to run successfully in a private cloud environment.



#### SAMPLE SPECIFICATIONS (per node):

<b>Form Factor:</b>	2U Rackmount
<b>CPU:</b>	Dual Intel® Xeon® Scalable Family Processors
<b>Memory:</b>	64GB or 128GB DDR-4 Registered ECC 2666MHz
<b>Interconnect:</b>	EDR/FDR/QDR InfiniBand
<b>Disk:</b>	2x 200GB SSD or 2x 1TB HDD

*Converged HPC, Big Data and cloud platform*

#### INTERESTED?

Finance, Government, Broadcast & Media, Scientific Research, Oil & Gas, Manufacturing and Bioinformatics are simply a few of the verticals that can leverage the vScaler cloud platform and services. 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.

# “LEADING-EDGE DISRUPTIVE TECHNOLOGY INTEGRATORS”

NVIDIA® VOLTA™



AMD EPYC™



INTEL® XEON®  
SCALABLE FAMILY



SEE THESE SOLUTIONS AT:

**SC17 - STAND 1775**

**ISC18 - STAND H-700**



Technology  
Provider  
Platinum 2017

## TAILOR-MADE SOLUTIONS

From the specification to a unique design, Boston has the knowledge and expertise to tailor the ideal solution for you.

## BOSTON HPC LABS

Remotely test and benchmark your technologies before investing to ensure our HPC solutions meet you exact requirements.

## LEADING-EDGE TECHNOLOGY

With engineers dedicated to assessing new technologies in Boston's R&D Labs facility, Boston is able to offer new technology first.



STORAGE



WORKSTATIONS



SERVERS



NETWORKING



SOLUTIONS



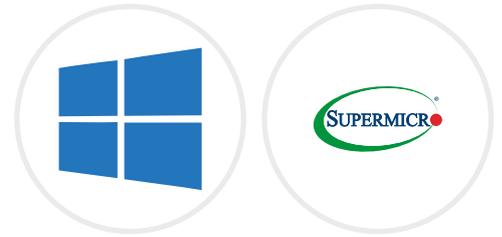
CLOUD  
SERVICES

## FEATURED S2D SOLUTION:

### Boston Igloo 1216-W10S

The Boston D-Stor series utilises Storage Spaces Direct, coined S2D, from Microsoft® to deliver a true scale out storage platform. A solution that can deliver both high performance capacity and provides options for hyper convergence.

Microsoft's S2D provides node to node fault tolerance through selectable data mirroring or parity policies. In the 4-node starter configuration, if a single node fails or requires maintenance, then it's applications and data are seamlessly serviced by the remaining nodes.



#### SAMPLE SPECIFICATIONS (per node):

<b>Form Factor:</b>	2U Rackmount
<b>CPU:</b>	2x Intel® Xeon® Scalable Family CPUs
<b>Memory:</b>	Up to 3TB DDR-4 Registered ECC 2666MHz
<b>Interconnect:</b>	Mellanox ConnectX-3 - 10GbE RoCE
<b>Disk:</b>	16TB SATA Capacity, 2TB SSD Cache

*A true scale out storage platform*

#### INTERESTED?

Boston has a range of solutions optimised for your scale out storage needs across multiple servers and clusters.

Our team are ready to answer any questions you may have about this or any other scale out storage solution. Get in touch today and speak to one of our experts who will help you build your custom solution.

## 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 & V100 GPUs.

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 ranked 3rd in the linpack test at the ISC17 Student Cluster Competition, in partnership with Edinburgh University EPCC.

#### SAMPLE SPECIFICATIONS:



#### ANNA PASCAL

**Form Factor:** 1U Rackmount

**CPU:** Dual Intel® Xeon® Scalable Family CPUs

**Memory:** 16x DDR-4 Registered ECC 2666MHz

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

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

#### ANNA VOLTA XL

**Form Factor:** 4U Rackmount

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

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

**GPU:** 8x NVIDIA® Tesla® V100 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 LUSTRE\* 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 (per node):

**Form Factor:** 4U Rackmount

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

**Memory:** 256GB DDR-4 Registered ECC 2400MHz

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

**Metadata Disks:** 2x 1TB SAS3 SSDs

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

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

#### INTERESTED?

Intel® Enterprise Edition for Lustre\* provides unmatched speed, and efficiency compared to other platforms and gives you the ability to independently Scale-Out or Scale-Up your storage in response to user demands.

Contact us now to discuss our range of solutions.

# 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 8U 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 AMD EPYC™ SOLUTION:

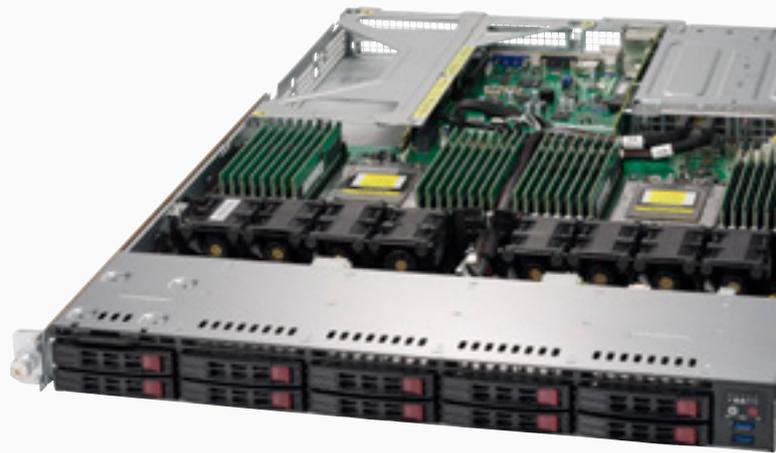



### Boston Fenway 2164-0T

Item #BOS-FX1-2164-0T

Based on Supermicro's 1U Ultra architecture, the Boston Fenway 2164-0T features AMD's EPYC™ 7000 range of processors. Built on the hotly anticipated Zen architecture, EPYC is set to make waves in the IT industry with its high specification and impressive feature set.

The server platform, formerly codenamed Naples, allows for up to a staggering 32 cores or 64 threads per processor and, as a result, compute intensive applications can be easily satisfied by a dual, or even a single CPU configuration; reducing cost and complexity.



#### SAMPLE SPECIFICATIONS:

<b>Form Factor:</b>	1U Rackmount
<b>CPU:</b>	Dual AMD EPYC™ 7000 Series Processors
<b>Memory:</b>	Up to 4TB DDR-4 Registered ECC 2666MHz
<b>Interconnect:</b>	4x 1GbE Ethernet Optional 10GbE
<b>Disk:</b>	10x Hot swap SATA3 2.5" HDDs, Optional SAS & NVMe U.2 Support

*A new era in datacentre computing*

#### INTERESTED?

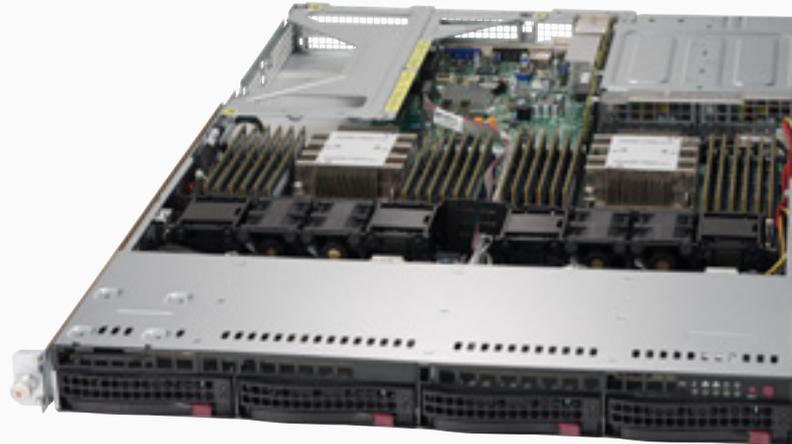
Our team are ready to answer any questions you may have about this solution. Learn more about AMD EPYC™ on page 24.

## FEATURED SERVER

### BOSTON FENWAY 2144-0T

Item #BOS-FX1-2144-0T

The Boston Fenway 2144-0T supports two Intel® Xeon® Scalable Family processors up to 205W (thanks to optimised cooling), 3TB of DDR4 in 24 DIMM slots, SATA3 with optional SAS and NVMe support, flexible networking options including 10/25/40/100G Ethernet and up to 4 PCI-E add-on cards. The Boston Fenway also features enterprise class IPMI/BMC remote management and redundant Platinum level power supplies.



#### SAMPLE SPECIFICATIONS:

##### FENWAY 2144-0T

**Form Factor:** 1U Rackmount

**CPU:** Dual Intel® Xeon® Scalable Family CPUs

**Memory:** 24x DDR-4 Registered ECC 2666MHz

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

**Disk:** 4x 3.5" Hot swap SATA/SAS bays

##### FENWAY 2244-0T

**Form Factor:** 2U Rackmount

**CPU:** Dual Intel® Xeon® Scalable Family CPUs

**Memory:** 24x DDR-4 Registered ECC 2666MHz

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

**Disk:** 12x 3.5" Hot swap SATA/SAS bays

### *Scalable and reliable performance*

#### INTERESTED?

The new Intel® Xeon® Processor Scalable Family provides up to 28-cores per processor with up to 2 threads per core. Making a massive improvement over the previous generation.

Our team are ready to answer any questions you may have about incorporating the Intel® Xeon® Processor Scalable Family into your customised solution.

See page 26 for more on the Xeon Scalable Processors.

## FEATURED SERVER:

### BOSTON QUATTRO 12256-T

Item #BOS-QK1-12256-T

Boston Ltd'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 parallelism, data parallelism and memory bandwidth – with improved single-thread performance and Intel® Xeon® processor binary-compatibility in a standard CPU form factor.



#### SAMPLE SPECIFICATIONS (per node):

**Form Factor:** 2U Rackmount

**CPU:** Intel® Xeon Phi™ 7230

**Memory:** 6x DDR-4 Registered ECC 2400MHz + 16GB MCDRAM

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

**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 an iSCSI SAN, we can help you find the right storage solution to meet your requirements.

## OUR STORAGE



### NETWORK ATTACHED STORAGE (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 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:

**Form Factor:** 2U Rackmount

**Storage Media:** 24 SATA SSD

**Capacity:** 19.2TB Total SSD capacity (5.8TB usable capacity)

**Configuration :** High availability FlexiRemap Pool

**Expansion:** Optional JBOD expansion available

*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.

## FEATURED OPEN-E SOLUTION:

### BOSTON IGLOO SBB JOVIAN 4U-20T-STOR

Item #BOS-IX0-1420-E10T

The Boston Igloo 4U-20T-Stor fulfils the requirement for a powerful but compact storage solution. It is a high capacity, unified file and block storage system that provides both Network Attached Storage and Storage Area Network functionality with an added level of SSD I/O acceleration. Advanced features of this software defined storage solution include High Availability with Active/Passive redundancy, Volume Snapshotting, Automatic Failover and SSD read and write caching via a ZFS file system.



#### SAMPLE SPECIFICATIONS:

Form Factor:	4U Rackmount
Storage Media:	2TB SAS 7k RPM + SAS SSD Hybrid
Capacity:	20TB to 240TB usable
Configuration:	RAID 10, RAID Z1, Z2 Options
Expansion:	Up to 2x 44-Bay Expansion JBODs Supported

## Enterprise high availability storage

### INTERESTED?

The Boston Igloo SBB JOVIAN provides superior performance, security, and scalability at a fraction of the cost of alternative storage offerings.

Our team at Boston are ready to configure a customised storage solution to meet your needs. Get in touch today!

## FEATURED NEXENTA SOLUTION:

### BOSTON IGLOO NEXENTA 4U-20T-STOR

Item #SSG-6048R-NEX4010

This Software-Defined Storage Solution is fully tested, validated, and easy to deploy and manage. This brings all the benefits of SDS, including flexibility, scalability, and a lower total cost of ownership. The unified storage solution powered by Nexenta, is a purpose-built, small form factor system that delivers enterprise grade, full featured unified file and block storage services.



#### SAMPLE SPECIFICATIONS:

Form Factor:	4U Rackmount
Storage Media:	Up to 4TB SAS 7k RPM
Capacity:	20TB to 272TB usable
Configuration:	2x Hybrid configs, options based on workload
Expansion:	Up to 2x 44-Bay Expansion JBODs Supported

*A unified storage solution*

#### 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.

## FEATURED EXCELERO SOLUTION:



### BOSTON FLASH-IO TALYN

Item #BOS-IX1-1214-01HQ

Solving one of the biggest challenges in computing today, Excelero enables low latency and high-performance access to NVMe volumes, delivered to remote clients with minimum processor overhead. Employing technologies such as RoCE v2 and 100Gbit/s EDR InfiniBand or 100GbE from Mellanox's Connect-X 5 range, processor overhead and latency is kept low, whilst bandwidth is plentiful.



#### SAMPLE SPECIFICATIONS: (per node)

##### FLASH-IO TALYN

**Form Factor:** 2U Rackmount

**Throughput:** Up to 23GB/s

**Capacity:** Up To 264TB RAW with  
11TB Micron 9200 Series NVMe

**Configuration:** RAID 0, 1, 10 Options

**Expansion:** Up to 24 x U.2 NVMe Devices

##### FLASH-IO TALYN SCALE OUT (4 Nodes)

**Form Factor:** 2U Rackmount

**Throughput:** Up to 45GB/s

**Capacity:** Up To 264TB RAW with  
11TB Micron 9200 Series NVMe

**Configuration:** RAID 0, 1, 10 Options

**Expansion:** Up to 24 x U.2 NVMe Devices (6 per node)

## A revolutionary leap forward in storage

### INTERESTED?

Available as either a disaggregated or converged solution, The Boston Flash-IO Talyn is a perfect fit for a variety of use cases.

Our team at Boston are ready to configure a customised storage solution to meet your needs. Get in touch today!

## FEATURED VSAN SOLUTION:

### BOSTON FENWAY 2124-VT

Item #BOS-FX1-2124-VT

The Boston Fenway 2124-VT is designed to power mission-critical, virtualised workloads and is delivered with the VMware® Enterprise Edition of vSAN®, as a ready to deploy, turn-key appliance. Featuring Intel® Xeon® Processor Scalable Family and Intel® P4600 Series NVMe SSD. The Boston Fenway 2124-VT is designed to provide the highest performance, flexibility, scalability and serviceability to demanding virtualisation environments, whilst simplifying management and server sprawl.



#### SAMPLE SPECIFICATIONS:

<b>Form Factor:</b>	1U Rackmount
<b>Storage Media:</b>	Up to 10x SAS/SATA 2.5" HDD/SSD
<b>Capacity:</b>	3.2TB to 7.2TB usable
<b>Configuration:</b>	Mirror or Parity Volumes
<b>Expansion:</b>	Scale out hyper converged infrastructure

*High performance infrastructure solution*

#### INTERESTED?

Delivering an efficient yet secure hyper converged infrastructure platform, the Boston Fenway 2124-VT's scale out storage functionality is designed with the capabilities essential for enterprise, such as compression, deduplication and encrypted datastores.

Contact our team now to discuss our range of 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 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 air-cooled and 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 Phi ready to help you build, test and analyse even the most complex of scientific theorem.

## FEATURED WORKSTATION:

### BOSTON VENOM EPYC™ WORKSTATION

The Boston Venom EPYC™ Workstation is designed to be the perfect companion for all design, VFX and digital content professionals.

Readily equipped to handle the most intensive applications across many professional industries – the Boston Venom EPYC™ Workstation is a high-end dual-processor system which supports up to 32 “Zen” cores and 64 threads per socket, up to 2TB of DDR4 ECC 2666MHz memory over 8 memory channels per socket, and up to 128 PCI-E 3.0 lanes.



### SAMPLE SPECIFICATIONS:

- Form Factor:** Tower / 4U rackmount (optional)
- CPU:** Dual AMD EPYC™ 7000 Series processors
- Memory:** Up to 2TB DDR-4 Registered ECC 2666MHz
- Network:** 2x 10GBase-T Ethernet ports based on Intel® X550
- Disk:** 8x 3.5" SATA Drive Bays (optional SAS 12Gb and U.2 NVMe)

*An excellent choice for professionals*

### INTERESTED?

The Boston Venom EPYC Workstation made waves at IBC 2017 recently, receiving a lot of industry and press attention for its position on the Global V-Ray benchmark chart.

Our team are ready to answer any questions you may have about this solution, or perhaps arrange a test-drive.

# NETWORKING



Thanks to close partnerships with leading network solution manufacturers, 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.



### ADAPTERS

We stock single and dual port network adapters from Mellanox, Intel, ProLabs, Solarflare 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.



Quantum 

#### 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 Plus 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 networking.

# FEATURED SOLARFLARE SOLUTION



## SOLARFLARE 4000 SERIES SOLARCAPTURE APPLIANCE

Item #SOLARCAPTURE4000SERIES

The SolarCapture product family provides packet capture capability for a variety of network management applications including troubleshooting, regulatory compliance, monitoring service level agreements, security analytics, network forensics, record keeping, performance monitoring and tuning. SolarCapture brings the ability to provide 100% lossless capture up to 40GbE, together with an open architecture which makes data available for third party applications and for export to long term storage options.



### KEY FEATURES:

#### Lossless packet capture as standard

Designed for real-time analytics, SolarCapture provides both throughput and capacity.

#### Open architecture

designed to share data with third party applications via the SolarCapture libpcap or C APIs, and to share alerts via Syslog and SNMP.

#### Real-time analytics

SolarCapture allows live query of captured and time-stamped data.

#### Easy to deploy and manage

Available as a stand-alone turnkey appliance, or as an adapter and software bundle which can be installed in an industry-standard server.

### *Solutions built for ultra scale data centers*

#### INTERESTED?

Built for today's and tomorrow's ultra scale data centers, The SolarCapture delivers streams from buffers in memory, or as an uninterrupted packet stream from disk when applications cannot keep up with the capture rate.

For your tailor made networking needs, get in touch today.

## FEATURED NETWORKING SOLUTION:



### MELLANOX ETHERNET SWITCH SN2100

Item #SN2100

The SN2100 switch provides a high density, side-by-side 100GbE switching solution which scales up to 128 ports in 1U for the growing demands of today's database, storage and data center environments. The SN2100 switch is an ideal spine and top of rack (ToR) solution, allowing maximum flexibility, with port speeds spanning from 10Gb/s to 100Gb/s per port and port density that enables full rack connectivity to any server at any speed. The uplink ports allow a variety of blocking ratios that suit any application requirement.



#### KEY FEATURES:

##### Throughput

3.2Tb/s  
4.76 Billion packets-per-second

##### High Density

16x 40/56/100GbE ports in 1U  
Up to 64x 10/25GbE ports,  
up to 32x 50GbE ports

##### Lowest Latency

300nsec for 100GbE port-to-port  
Flat latency across L2 and L3 forwarding

##### Lowest Power

Under 6 watts per port

*True cut through latency*

#### INTERESTED?

The SN2100 carries a unique design to accommodate the highest rack performance. Its design allows side-by-side placement of two switches in a single, 1U slot of a 19" rack, delivering high availability to the hosts.

Get in touch today and avail yourself of Boston's vast networking solutions.

# INDUSTRY NEWS



AMD®



AMD EPYC™ - A LONG AWAITED  
X86 ALTERNATIVE



Advanced Micro Devices, or AMD for short, have long been a household name for all kinds of processors, be it x86, GPU or even APU. More recently, however the market has shown AMD to be playing in the shadow of their main competitor, Intel, with a significantly lower market share. Despite leading the market into x86 64-bit architecture with success in the mid 2000's from the Opteron and AMD FX line of processors, AMD sales tailed off several years ago – but this is all set to change.

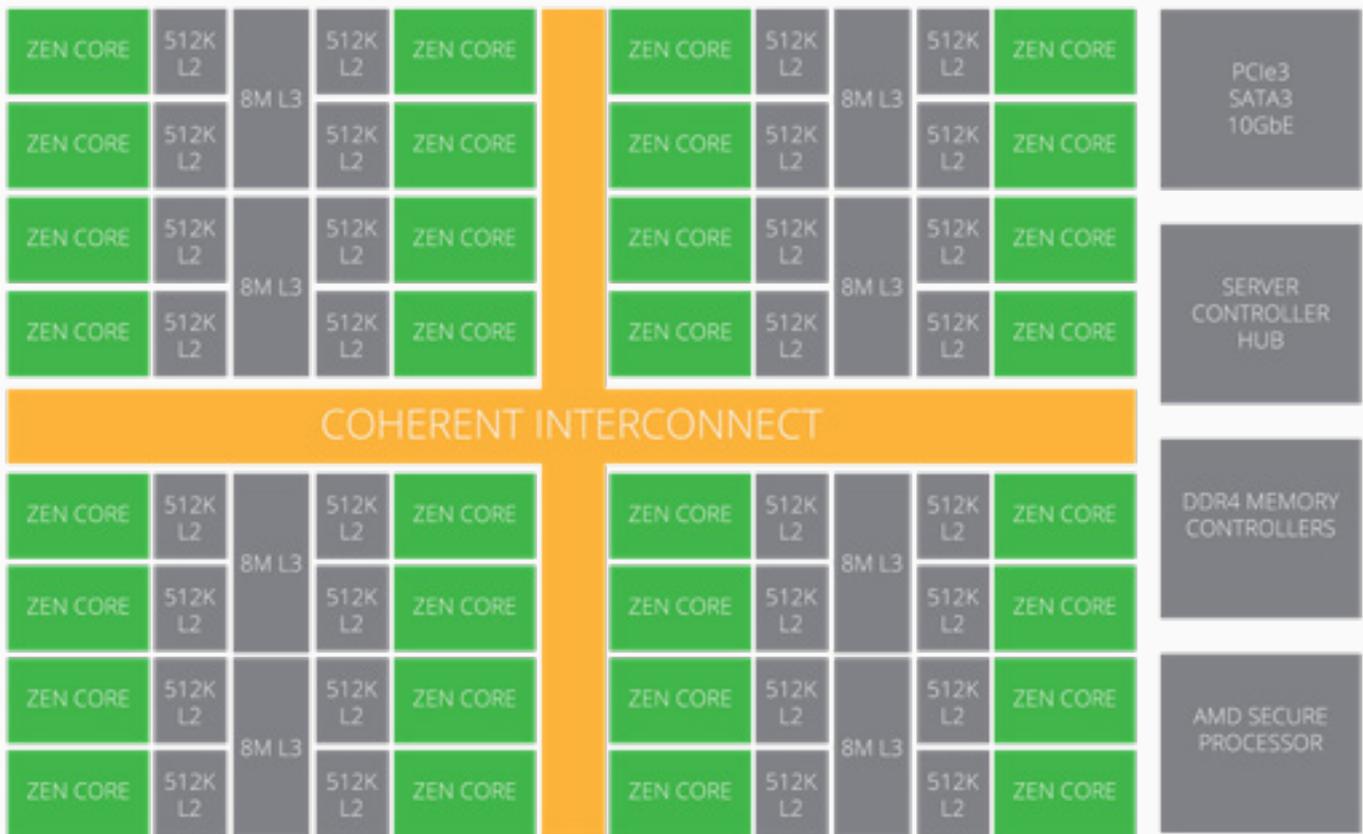
Whilst it appeared that AMD have been quiet in the server market, they have been working hard on designing a new chip, one to seriously rival Intel in the datacentre space; codenamed Naples.

Naples, or EPYC as it has been branded at launch, is a through and through high performance chip, designed from the ground up to meet the

challenges of modern computing, whilst keeping competitors well in its sight.

It's built around the new "Zen" core which was launched earlier in the year in the consumer space as Ryzen and Threadripper, which has already proved its credentials as a high performance part, offering great performance per watt per dollar. It features a wide range of specifications which enable it to be placed into a variety of both high performance, high density and embedded workloads, including –

- 8 to 32 AMD "Zen" x86 cores (16 to 64 threads)
- 512KB L2 cache per core (16 MB total L2 cache)
- 64MB shared L3 cache (8MB per 4 cores)
- TDP range: 120W-180W
- 8 channel DDR4 with ECC up to 2666 MHz
- RDIMM, LRDIMM, 3DS, NVDIMM, Flash
- 2 DIMMs/channel capacity of 2TB/socket
- 128 lanes PCIe Gen3
- Server Controller Hub (USB, ART, SPI, LPC, I2C, etc.)
- Dedicated Security Subsystem
- Hardware Root of Trust-ability to run certified (signed) firmware



All these features make the AMD EPYC a competitive offering, which is guaranteed to shake up the market in ways that haven't been seen in many years – promising to drive innovation in the processor sector, which is certainly going to be good news for consumers.

FIRST TO MARKET - AVAILABLE TO TEST TODAY

Thanks to the unique relationship between Boston and Supermicro, Boston are able to offer the broadest portfolio of optimised solutions for AMD EPYC™ 7000 Series.

The range aims to revolutionise the dual-socket server market while simultaneously reshaping expectations for single socket-servers with its support for AMD EPYC processors providing outstanding core density and performance, superior memory bandwidth and unparalleled support for high-speed input/output (I/O) channels in a single processor. These servers supporting AMD EPYC will radically lower data

center TCO through an optimized balance of compute, memory, I/O, and storage resources.

Boston are pleased to offer a comprehensive selection of solutions ready for testing at Boston Labs. Our experts are on hand to assist you in the customisation of your solution. Simply speak to a member of our sales team to arrange your test-drive today.

Our Fenway 2164-0T is a perfect example. A server with dual AMD EPYC processor support, for up to 64 cores or 128 threads and up to 3TB of memory in a single 1U rackmount enclosure – perfect for high density computing, virtualisation and cloud.

SYSTEM SPECIFICATIONS

For specifications of our 1U, the Boston Fenway 2164-0T as mentioned in this article, please see page 13 more more details.

# INTEL® SKYLAKE



DO YOU KNOW YOUR INTEL® XEON® PROCESSOR SCALABLE FAMILY?



There has been a lot of confusion in the industry since Intel launched their new range of Xeon processors, whilst their naming convention has never been simple, up until recently, there was a relatively straight forward and well known series of iterations to choose from. Models such as the Xeon E3, E5 and E7 series, much like BMW cars, helped you to determine the right part for you. As you selected from each range, a processor with the right mix of cores, frequency and features; you climbed the range from 3 to 5 to 7.

Unfortunately, as with many things in life, change happens and often for the better; and so we bid farewell to these part codes which we hold fondly, and say hello to the Intel® Xeon® Processor Scalable family – which ultimately will replace all of these with one big, happy, family of processors.

At first glance things are simple, that is as Platinum has the richest feature-set, with the range of Bronze parts delivering the lower end SKUs.

Things were a little more defined previously however, as there were certain population rules which separated each range of processors in the last generation, which have subsequently been mixed up in the Processor Scalable Family. For example, E3-1200 series, was only ever a uniprocessor product, and couldn't be used for dual processor platforms; it uses an entirely different socket to the E5 and E7, whereas all models from the new range share a common socket, meaning that the bronze and silver range, can be used in single or dual processor configurations, gold in 1-4 processor configurations and platinum in up to 1-8 processor configurations.

## WHAT ABOUT BACKWARDS COMPATIBILITY?

Intel Xeon Processor Scalable Family and Intel Xeon E3 etc. are not pin to pin compatible. Therefore, to use any Skylake CPUs listed above will require a new Supermicro System or motherboard, there is NO backwards compatibility at all. If you are still concerned and confused on how to upgrade or advise your customer on which CPU SKU to go for versus the old world naming convention, the experts at Boston are always on hand to advise.

## TEST THE LATEST GENERATION IN OUR LABS

Making the right decision about new hardware can be made even harder when clients are unable to test and understand it first before making their purchase.

Boston have on-site test facilities available immediately across a wide range of hardware options. Contact us today for more information and to arrange a solution test-drive.

# NVIDIA® VOLTA™



## INTRODUCING VOLTA



Every industry wants intelligence. Within their ever-growing oceans of data lie insights that can revolutionise entire industries. Personalised cancer therapy, predicting the next big hurricane, virtual personal assistants conversing naturally. These opportunities can become a reality when data scientists are given the tools they need to realise their life's work.



The NVIDIA® Tesla® V100 is the world's most advanced data center GPU ever built to accelerate AI, HPC and Graphics. Powered by the latest GPU architecture, NVIDIA Volta™, Tesla V100 offers the performance of 100 CPUs in a single GPU—enabling data scientists, researchers, and engineers to tackle challenges that were once impossible.

## VOLTA ARCHITECTURE

By pairing CUDA Cores and Tensor Cores within a unified architecture, a single server with Tesla V100 GPUs can replace hundreds of commodity CPU servers for traditional HPC and Deep Learning.

## TENSOR CORE

Equipped with 640 Tensor Cores, Tesla V100 delivers 120 TeraFLOPS of deep learning performance. That's 12X Tensor FLOPS for DL Training, and 6X Tensor FLOPS for DL Inference when compared to NVIDIA Pascal™ GPUs.

## NEXT GENERATION NVLINK

NVIDIA NVLink in Tesla V100 delivers 2X higher throughput compared to the previous generation. Up to eight Tesla V100 accelerators can be interconnected at up to 300 GB/s to unleash the highest application performance possible on a single server.

## MAXIMUM EFFICIENCY MODE

The new maximum efficiency mode allows data centers to achieve up to 40% higher compute capacity per rack within the existing power budget. In this mode, Tesla V100 runs at peak processing efficiency, providing up to 80% of the performance at half the power consumption.

Boston has an extensive range of GPU optimised solutions that support the latest technologies from NVIDIA. Contact us today to speak to one of our experts.

# 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.

#### 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 15

### 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:** ★★★★★



*An affordable, high capacity storage appliance that supports NAS, IP SAN and FC SAN operations out of the box"*

# 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***



FACEBOOK.COM/***BOSTONLIMITED***



LINKEDIN.COM/COMPANY/***BOSTON-LIMITED***



YOUTUBE.COM/USER/***BOSTONLIMITED***

# OUR PARTNERS



# BOSTON

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