

**Hewlett Packard  
Enterprise**

# **HPC & AI with HPE**

Kevin Jameson, Federal HPC Sales

# HPE purpose-built portfolio for HPC and AI

## HPC and AI Industry Solutions



Financial Services



Academia, Research, Gov't



Life Sciences, Health



EDA / CAE Manufacturing



Oil and Gas, Energy



Weather and Climate Research



Advisory, Professional and Operational Services – HPE Flexible Capacity for HPC, HPE Datacenter Care for Hyperscale

## Supercomputing / Enterprise / Commercial HPC

### HPE SGI 8600



Liquid cooled, delivering industry leading performance, density, & efficiency

### HPE Apollo 6000



Extreme Compute Performance in High Density

### HPE Apollo 2000

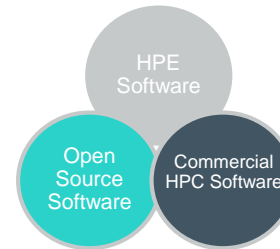


The bridge to enterprise scale-out architecture

## High Performance Computing Software Portfolio

### HPE Performance Software Suite

- HPE Insight Cluster Management Utility
- HPE SGI Management Suite
- HPE Performance Software – Message Passing Interface



## HPC Purpose built

### HPE Apollo 6500 Gen10



Purpose built scalable flexible manageable for ever changing workloads

### HPE DL Servers



Extraordinary versatility and applicability in HPC solutions.

## HPC Storage

### HPE Apollo 4510



Additional Storage Options Available

### HPC Data Management Framework Software

Large-scale, storage virtualization & tiered data management platform

## HPC In-memory Compute

### HPE Superdome X



Scale Up HPC

### HPE MC990 X



## Networking



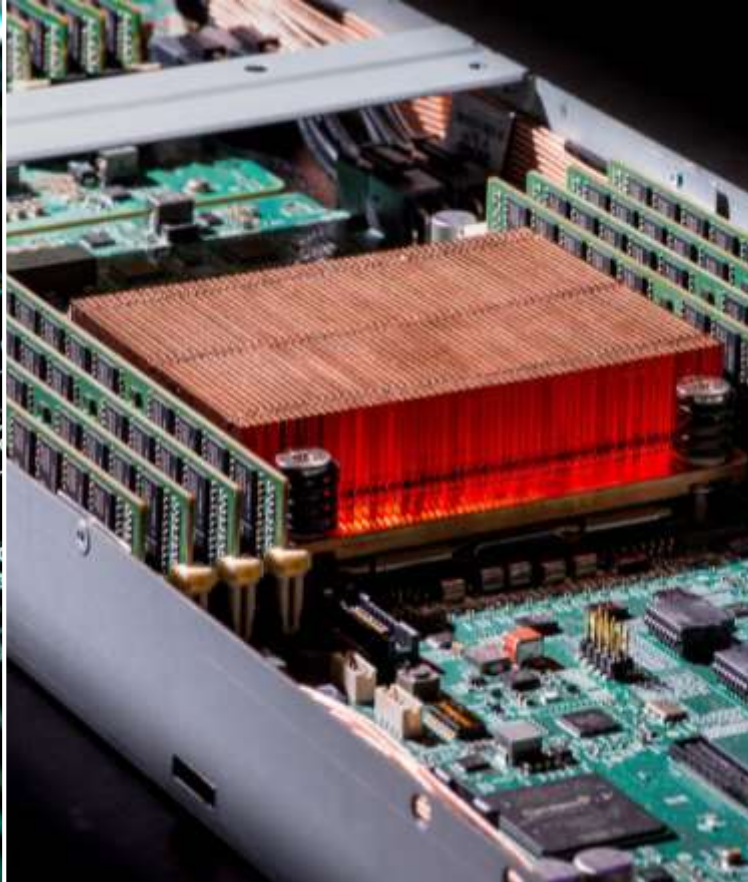
Low latency, high bandwidth

# AI Horsepower for the Future

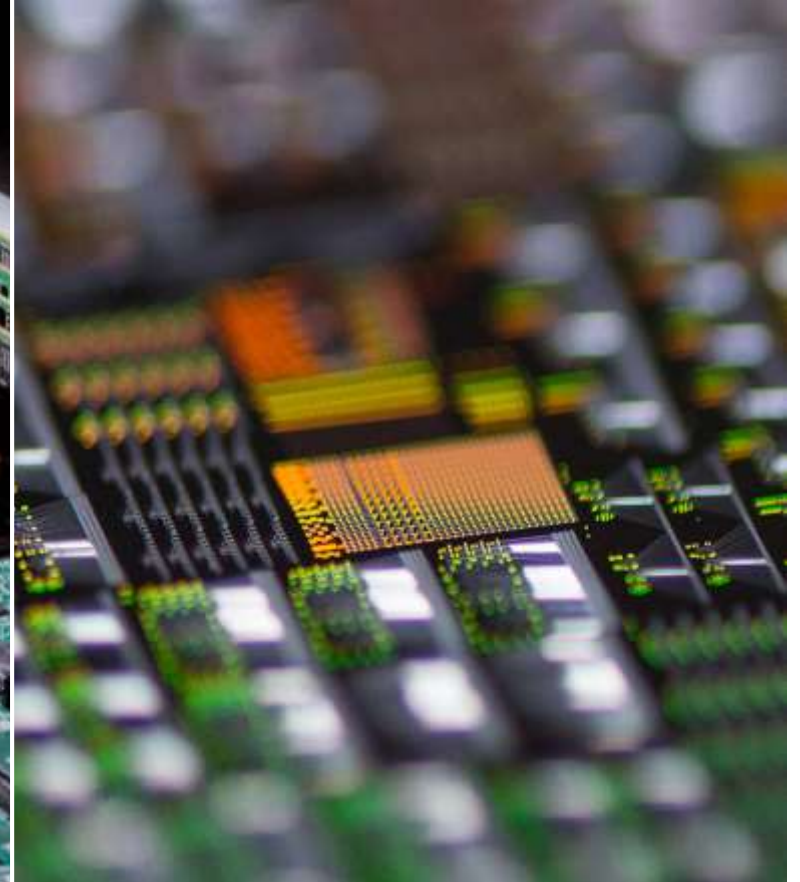
The three dimensions of unconventional computing



**Unconventional  
programming**



**Unconventional  
architectures**



**Unconventional  
accelerators**

# HPE AI Enabled Servers

**Apollo 40  
(sx40)**



P100-16GB SXM2 (4), Q0C71A  
V100-16GB SXM2 (4), Q2N66A

**Apollo 2000  
(XL190r Gen10)**



M10 (2), Q0J62A  
P40 (2), Q0V80A  
P100-12GB (2), Q2S42A  
P100-16GB (2), Q0E21A  
V100 PCIE (2), Q2N68A  
**V100-32GB (2), Q9U36A – 8/18**

**Apollo 6500  
(XL270d Gen10)**



P40 (8), Q0V80A  
P100-16GB (8), Q0E21A  
P100-16GB SXM2 (8), Q0C71A  
V100-16GB SXM2 (8), Q2N68A  
V100-16GB (8), Q2N66A  
**V100-32GB SXM2 (8), Q9U37A**  
**V100-32GB (8), Q9U36A**

**HPE SGI 8600  
(XA780i)**



P100 SXM2 (4), Q0C71A  
V100 SXM2 (4), Q2N66A

**Edgeline EL1000/4000  
m510/m710x Cartridge**



P4 (2), Q0V79A

**ProLiant DL360 Gen10**



P4 (2), Q0V79A

**ProLiant DL380/385 Gen10**



P4 (5), Q0V79A  
P40 (3), Q0V80A  
GV100 (3), Q1K34A  
P100-16GB (3), Q0E21A  
V100-16GB (3), Q2N68A  
**V100 FHHL (5), Q8Z50A – 6/18**  
**V100-32GB (3), Q9U36A – 8/18**

**ProLiant ML350 Gen10**



P40 (4), Q0V80A  
**GV100 (4), Q1K34A – 10/18**  
**NVLink Bridge (4), Q2N67A – 10/18**

**ProLiant DL580 Gen10**



P40 (8), Q0V80A  
**P100-16 (2), Q0E21A –**  
**V100-16 (2), Q2N68A –**

**Superdome Flex**


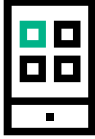


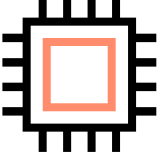






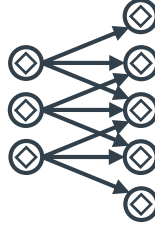

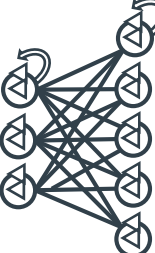


P100-16 (4), Q0E21A  
V100-16 (4), Q2N68A

# Deep Learning Ecosystem



# Why HPE Deep Learning Cookbook?

| <br><b>Data</b>   | <br><b>Applications</b>   | <br><b>Models</b>   | <br><b>Software</b> | <br><b>Hardware</b> |
|--|--|--|--|--|
|  <b>Images</b><br> <b>Video</b><br> <b>Speech</b><br> <b>Text</b><br> <b>Sensor</b><br><br><b>Hewlett Packard Enterprise</b> | <b>Detection</b><br>Look for a known object/pattern<br><b>Generation</b><br>Generate content<br><b>Classification</b><br>Assign a label from a set<br><b>Anomaly detection</b><br>Look for abnormal patterns | <b>Convolutional NNs</b><br><br><b>Fully connected NNs</b><br><br><b>Recurrent NNs</b><br> | <b>TensorFlow</b><br><b>MXNet</b><br><b>Caffe2</b><br><b>PyTorch</b><br><b>TensorRT</b>                | <b>GPUs</b><br><b>CPUs</b><br><b>Storage</b><br><b>Interconnect</b><br><b>Memory</b>                   |