



# HPE APOLLO 80 SYSTEM

## Apollo 80 System



### OVERVIEW

Are you ready for a purpose-built HPC platform with powerful features such as Scalable Vector Extensions (SVE) and High Bandwidth Memory (HBM)?

The HPE Apollo 80 System offers customers the opportunity to build HPC clusters with one of the most advanced Arm® processors on the planet combined with the Hewlett Packard Enterprise HPC robust ecosystem of software and HPE Pointnext support. HPE Apollo 80 has a high-density configuration with 8 single socket Fujitsu A64FX™ based servers in a 2U platform. The A64FX SVE and HBM deliver leadership floating-point and high memory bandwidth performance as compared to not only other Arm platforms, but current x86 based platforms as well. The HPE Cray Programming Environment offers an excellent development environment for customers developing their own code and porting to the new SVE architecture.

## FEATURES

### **Leading Arm Performance for HPC/AI Applications with the A64FX Processor**

HPE Apollo 80 System features 48 compute cores each with two 512 bit SIMD fused multiply-add (FMA) units based on the Arm SVE architecture, delivering up to 3 Teraflops per processor. The 48 cores are arranged into 4 core memory groups of 12 cores each with 8 GB of HBM.

The vector-like instructions can provide enhanced floating point performance for highly parallelizable applications (HPC/AI). The SVE implementation means that code written for the HPE Apollo 80 System can take advantage of Arm processors with longer SVE units.

A total of 32 GB HBM (4 x 8 GB) delivers an aggregate system memory bandwidth of over 1 TB per second. A tiered cache structure inside the processor with one 64 KB L1 cache per core and one 8 MB L2 cache per core memory group further contributes to overall memory performance.

### **Cluster Ready Solution**

HPE Apollo 80 System is a dense solution with 8 single socket A64FX based servers in a 2U chassis. This enables assembling systems (up to 168 servers in a 42U rack) which saves floor space and improves use of optical cabling for larger deployments.

HPE Performance Cluster Manager (HPCM) offers customers all the tools they need to manage their HPE Apollo 80 HPC clusters with ease all day, every day. The software provides system setup, hardware monitoring and management, health management, image management, and software update management.

The A64FX is an extremely powerful and efficient processor that topped the SC2019 Green500 for supercomputing platforms. [1] The A64FX processor with the HPE Apollo 80 System delivers similarly impressive teraflop/watt performance in an industry standard solution.

### **Comprehensive Software Portfolio and Support**

Hewlett Packard Enterprise offers a comprehensive software stack for HPE Apollo 80 systems that offers a superb experience including software for system administration, software development tools for HPC applications, and workload management tools to run jobs efficiently.

HPE Cray Programming Environment is a fully integrated software suite with compilers, tools, and libraries designed to improve programmer productivity, application scalability, and performance – a must for organizations which develop their own code.

HPE Cray Programming Environment has supported Arm for years and Cray's vector processing background has played a significant role in both Arm SVE architecture and producing an efficient compiler for the A64FX SVE implementation.

HPE Cray Programming Environment for Arm is a winner of HPCwire Readers' Choice Award 2019 for the Best HPC Programming Tool or Technology. [2]



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### **Other related services**

**[Defective Media Retention](#)** is optional and applies only to Disk or eligible SSD/Flash Drives replaced by HPE due to malfunction.

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For additional technical information, available models and options, please reference the [QuickSpecs](#)

## HPE GREENLAKE

[HPE Greenlake](#) is HPE's market-leading IT as-a-Service offering that brings the cloud experience to apps and data everywhere – data centers, multi-clouds, and edges – with one unified operating model. HPE GreenLake delivers public cloud services and infrastructure for workloads on premises, fully managed in a pay per use model.

If you are looking for more services, like **IT financing solutions**, please [explore them here](#).

[1] GREEN500: The Latest List - November 2019 ([top500.org/green500/lists/2019/11/](https://top500.org/green500/lists/2019/11/))

[2] HPCwire Reveals Winners of the 2019 Readers' and Editors' Choice Awards at SC19 Conference in Denver, November 18, 2019 ([hpcwire.com/off-the-wire/hpcwire-reveals-winners-of-the-2019-readers-and-editors-choice-awards-at-sc19-conference-in-denver-co/](https://hpcwire.com/off-the-wire/hpcwire-reveals-winners-of-the-2019-readers-and-editors-choice-awards-at-sc19-conference-in-denver-co/))

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