



# CFD CLUSTER SOLUTION

## Computational Fluid Dynamics On Premise

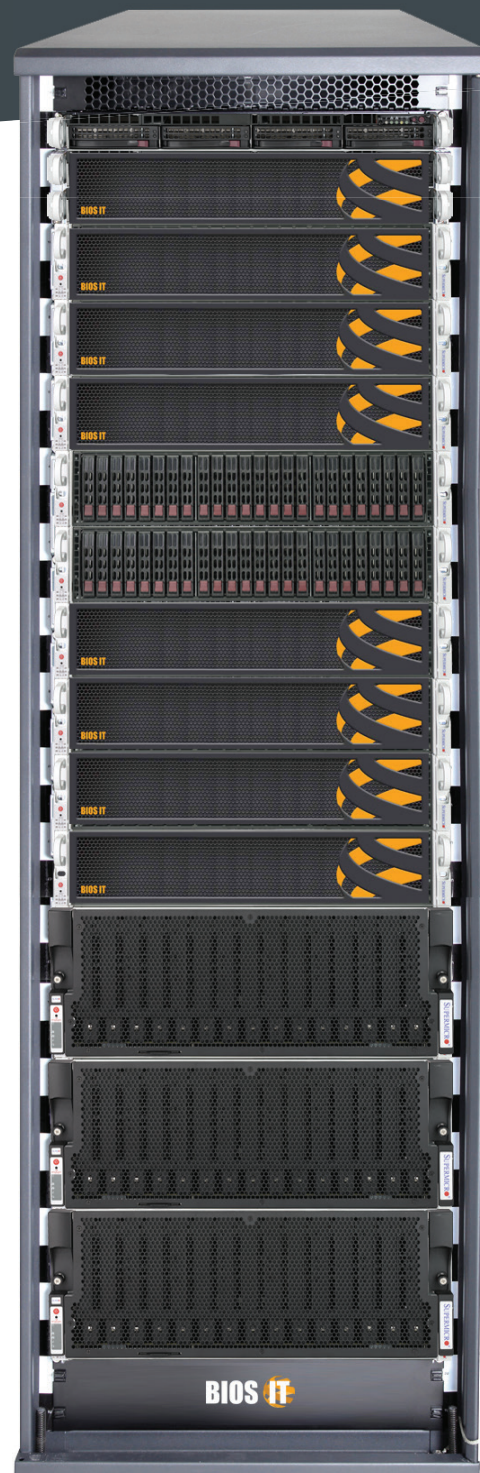
Run your CFD Simulations on our cutting edge cluster with the support of our motorsport and HPC experts who can aid in tuning meshing and solver performance.

Automotive manufacturers are under pressure to minimise the product development lifecycle, and as a result have been relying on CFD and computer-aided engineering (CAE) simulations to facilitate this. New car designs are released constantly, and to keep up with the demand for a reduced lead time, engineers need to rely more on simulation and less on physical testing to take their designs across the line.

BIOS IT is offering customers the ability to run simulations on its state of the art clusters, backed by a team of experts. The CFD Solutions Team can aid in tuning meshing and solver performance through, for example: process and memory bindings, to deliver staggering results and give a high level of confidence in the true potential of a new solution. BIOS IT's solution includes integrated, industry leading software such as ANSYS, OpenFOAM, Pam-Crash and STAR-CCM+ (among others), and is specifically designed to improve development efficiency.

The platform effectively simulates a wind tunnel in a computer, to enable F1 customers to improve aerodynamics at a much lower cost when compared to real-world wind tunnel testing.

Supporting up to 32 "Zen" cores and 64 threads per socket, our solution featuring AMD EPYC™ processors, is tightly coupled with high-throughput, low-latency, hot-swappable NVMe storage, up to 4TB of DDR4 memory over 8 memory channels per socket, and up to 128 PCI-E 3.0 lanes on a dual- or single-socket system.



### GET IN TOUCH

#### AMERICAS

1-800-654-BIOS  
123 10th St.  
San Francisco, CA 94103.

#### EMEA

+44 (0) 203 178 6467  
Salisbury House, 29 Finsbury Circus,  
London, EC2M 5QQ

#### APAC

+61 (0)2 9959 1010  
Level 12, 1 Pacific Highway,  
North Sydney, NSW 2060

## AN END-TO-END CFD SIMULATION PLATFORM

### Hardware

Our solutions are optimised to accelerate CFD simulations using the latest generation technology such as GPUs and NVMe over Fabric.

### CFD Services

We can manage standard cluster status as well as user code correction and debugging, queuing and scheduling support, application installation and optimisation.

### Software

Integrated, industry leading software such as ANSYS, OpenFOAM, Pam-Crash and STAR-CCM+ - specifically designed to improve development efficiency.

#### SUPPORTED APPLICATIONS

OpenFOAM  
STAR-CCM+  
ANSYS  
Pam-Crash

#### STORAGE

Unified Storage  
Containerisation

#### SECURITY

Disaster Recovery  
Rolling Upgrades  
Zero Downtime

CLUSTER COMPONENT	QUANTITY	DESCRIPTION
HEADNODE(S)	1-2	Cluster Management Nodes
LOGIN NODE(S) (OPTIONAL)	1-4	Cluster Access Login Nodes
COMPUTE NODES	1-1000+	Cluster Compute nodes powered by AMD EPYC™ CPUs
PARALLEL STORAGE	TB-PB+	Scale out parallel files system for fast IO access across the cluster
MANAGEMENT SOFTWARE	-	Cluster Management Software Suite to manage, control and monitor all the HPC infrastructure. (OpenHPC, xCAT or Bright)
APPLICATION SOFTWARE	-	CFD Integrated and benchmarked across the cluster.



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