

How Do DMACH Components Compare?

Functionality Element	XP12000	XP10000	XP1024	XP128	DMACH
Max Sequential Performance	9.9 GB/s	1.3 GB/s	2.1 GB/s	1.2 GB/s	5.6 GB/s
Max Random Performance	1,900,000 IOPS	700,000 IOPS	544,000 IOPS	272,000 IOPS	560,000 IOPS
Max Random Performance Cache	120,000 IOPS	16,000 IOPS	66,000 IOPS	33,000 IOPS	140,000 IOPS
Max Raw Capacity	332 TB + 32 PB External Storage	69 TB + 16 PB External Storage	149 TB	36 TB	420 TB
Max Cache	256 GB	64 GB	128 GB	64 GB	8 GB
Host System Interface	2 Gbps FC 4 Gbps FC* ESCON 2 Gbps FICON iSCSI	2 Gbps FC 4 Gbps FC* ESCON 2 Gbps FICON iSCSI	2 Gbps FC ESCON 2 Gbps FICON iSCSI	2 Gbps FC ESCON 2 Gbps FICON iSCSI	2 Gbps FC
RAID levels supported	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P) RAID 6 (6D + 2P)	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P) RAID 6 (6D + 2P)	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P)	RAID 1 (2D + 2D) RAID 1 (4D + 4D) RAID 5 (3D + 1P) RAID 5 (7D + 1P)	RAID 0,1,10,5,50, JBOD Up to 256 Drives per RAID set
Drive Interface	2 Gbps FC-AL Dual Active Ports	2 Gbps FC-AL Dual Active Ports	1 Gbps FC-AL Dual Active Ports	1 Gbps FC-AL Dual Active Ports	2 Gbps FC-AL Dual Active Ports
Drive Capacity	73 GB 15K RPM 146 GB 10K RPM 146 GB 15K RPM 300 GB 10K RPM	73 GB 15K RPM 146 GB 10K RPM 146 GB 15K RPM 300 GB 10K RPM	36 GB 15K RPM 73 GB 10K RPM 73 GB 15K RPM 146 GB 10K RPM 300 GB 10K RPM	36 GB 15K RPM 73 GB 10K RPM 73 GB 15K RPM 146 GB 10K RPM 300 GB 10K RPM	36, 73, 146, 300 GB FC 10K RPM 36, 73, 146 GB 15K RPM 250, 400, 500 GB SATA 7.2K RPM
Disk Drives	1152	240	1024 (512 300 GB disks)	128	840
External storage capability	XP1024, XP128, XP 512, XP48, XP256, EVA8000, EVA6000, EVA4000, EVA5000, EVA3000, MSA1500, MSA1000, EMC, IBM, and HDS arrays**	XP1024, XP128, XP 512, XP48, XP256, EVA8000, EVA6000, EVA4000, EVA5000, EVA3000, MSA1500, MSA1000, EMC, IBM, and HDS arrays**	None	None	None
Online firmware update	One CHIP processor at a time keeps all ports operating with no host port interruption	One CHIP processor at a time keeps all ports operating with no host port interruption	One CHIP blade at a time keeps the other blade operating, may interrupt a host with a single connection	One CHIP blade at a time keeps the other blade operating, may interrupt a host with a single connection	Controller firmware is downloaded to one or all controllers in a cluster. Individual controllers can be restarted

The DMACH Controller

An important component of the DMACH hardware performance solution utilizes cutting edge **Digi-Data** Corporation Controller technology.

Used in conjunction with other cutting edge technologies including use of Hybrid Drives, Solid State Storage and switches the DMACH solution delivers unbeatable ROI in the shortest possible timeframe.

In combination with **CentreIT's** proven performance tuning, the DMACH solution delivers a fast, flexible system at a cost below what a competitor system would require to deliver similar speed, with just hardware alone.

How will **YOUR** organization get faster data access?

Just buy **MORE** hardware? Just spend **MORE** money?
and get **Standard** performance?

CHANGE NOW WITH DMACH >>>

DMACH 
SQL Data Center TM
Extreme • Data • Performance



DMACH

The **DMACH SDC** solution combines individual high speed components and tuning, optimized for each unique customer environment.



*XP12000, XP10000, XP1024 and XP128 are registered trademarks of Hewlett Packard Corporation.

DMACH Delivers Extreme Data Performance!

CentreIT uses the highest performance hardware available in the industry today for the DMACH solution hardware at a lower price than many of the larger competitors.

CentreIT has partnered with **Digi-Data Corporation** in research, development and building of the highest-speed hardware solutions tailored for specific industry applications.

Digi-Data has been an industry leading provider of archive storage solutions for over 30 years. CentreIT has been delivering system performance optimization for over 15 years in the US and overseas for commercial and private sectors.

The DMACH Solution

1

System Architecture

In many cases, applications may not be in a speed optimized architecture for the types of processing they are performing. Systems have often grown quickly and over time, may no longer be optimized for speed. The CentreIT team looks at these initial performance factors in the form of analysis and recommends performance solutions based upon this analysis. These solutions can include specific tuning points, code changes or architecture/hardware changes or additions.



2

Application Tuning

The DMACH solution looks at the internal tuning points of the particular application that is having performance bottlenecks. CentreIT is a leading expert in performance tuning and has tuned thousands of servers internationally. In many cases this has resulted in up to 500% performance improvement for clients.

3

Application Code

In the case of a custom developed application, it can often be the case that some aspect of code can be causing application performance bottlenecks. This can be based on how the application interacts with a database or how it is deployed in the physical environment. The DMACH solution can perform analysis on this type of application and assist with or perform development to resolve issues.

4

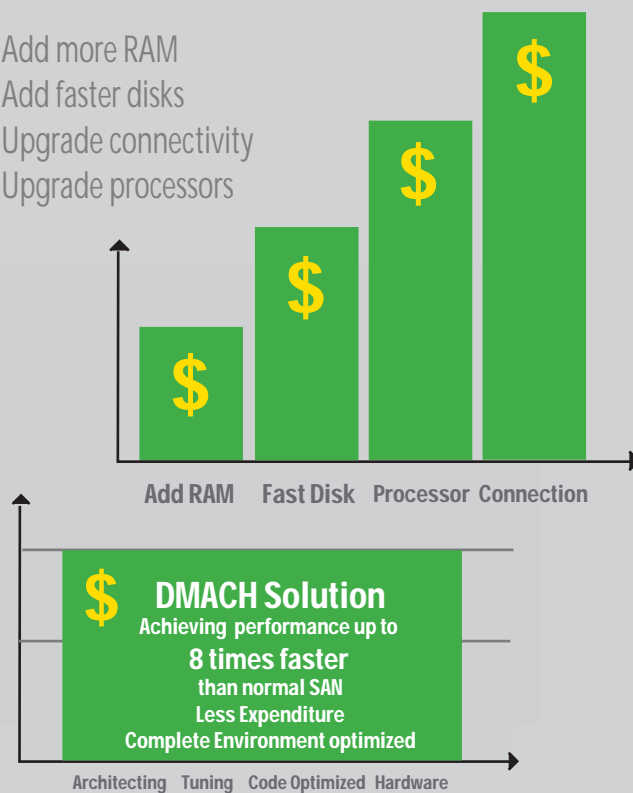
High Performance Hardware

The key to the DMACH solution is that in addition to the architecture, tuning and coding improvements it also offers the fastest custom hardware configurations for many applications including database, web server, and many leading web-based applications. The DMACH solution looks at each piece of the existing hardware as it relates to the software experiencing performance bottlenecks and will recommend hardware solutions that will resolve these issues.

Stuck With the Old Way..

It used to be that the only way to increase data speed was to invest in more costly hardware. Some of the hardware options available for this approach included :

- Add more RAM
- Add faster disks
- Upgrade connectivity
- Upgrade processors



With even the most modern technology available today a **maximum performance ceiling** is quickly reached using this approach alone.



Inside DMACH

Scalability and Disaster Recovery

The DMACH solution includes several products that can provide different grades of scalability and recoverability. As higher performance and recovery are needed, different components of DMACH can be utilized. DMACH can be added to existing SAN and mainframe technology to allow for modular growth of infrastructure. Software tools including the **VAULT** product incorporated into the DMACH architecture allows for full site disaster recovery as well as local wireless data recovery for application use in PDA and handheld devices.

CentreIT and Digi-Data : Industry Best Partners

DMACH hardware components include industry leading Digi-Data controllers, specially designed and tuned in partnership with CentreIT to deliver specific application performance. The DMACH solution uses cutting edge technology including the careful allocation and usage of **solid state technologies** and **high performance hybrid drives** to optimize both sequential and random I/O at the most cost effective pricing point available.

