



Product Bulletin

Introduction of Flash Cache (“PAM II”) November 10

Revision History

August 12, 2009 - Initial version

October 14, 2009 – Data ONTAP® 8.0 Update

December 14, 2009 – FAS/V6070 Support Update

August 16, 2010 – SA600 Support Update

November 8, 2010 – FAS/V3200, FAS/V6200, SA620 Support Update and Name Change to “Flash Cache”

December 13, 2010 – SA320 Support Update

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This product bulletin informs NetApp sales and NetApp partners about new or changed NetApp® products or services.

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1. Summary

This product bulletin formally announces the name change of “PAM II” to “Flash Cache.” Flash Cache provides an innovative way, using flash technology, to optimize the performance of NetApp storage systems. Designed as an intelligent read cache, Flash Cache can deliver higher I/O throughput and lower latencies compared to high-performance disk drives in random-read-intensive workloads.

Flash Cache is already supported in a number of currently shipping systems, including FAS/V3070, FAS/V3100 series, FAS/V6040, FAS/V6070, and FAS/V6080 systems series and in corresponding systems with FlexCache® enabled, including the SA600 system. Refer to the configuration guide in section 4 for additional details.

With the November 2010 Quote Tool release, Flash Cache support for FAS/V3200 and FAS/V6200 and the SA620 FlexCache system series systems has been added.

With the December 2010 Quote Tool release, Flash Cache support for the SA320 series systems has been added.

2. What's New?

The Flash Cache modules come in two sizes, 512GB and 256GB. Each Flash Cache adds intelligent cache to the storage system. Depending on the storage system (dual controller), as many as 16 modules (with a total of 8TB of cache) can be added. (Refer to the table in section 4.)

Flash Cache can improve *disk-bound* performance (IOP and latency) in many random-read-intensive workloads, such as file services, OLTP, engineering applications, and others. The module may also help achieve *controller-bound* performance with fewer shelves in those workloads. Customers also have the ability to customize the behavior of Flash Cache, by using settable options, to meet the specific performance demands of individual workloads. The performance benefits provided by Flash Cache can translate into power, space, and cooling reductions, which lower the total cost of ownership for NetApp solutions.

An updated Predictive Cache Statistics (PCS) tool predicts how the addition of Flash Cache will improve the performance of the controller in actual customer environments. This tool uses data from emulated caches to help determine optimal Flash Cache settings and the number of modules to deploy to achieve maximum benefit. The updated PCS tool is included in Data ONTAP 7.3.2 and 8.0.1.

FAS/V3210 and FAS/V3240 systems now offer Flash Cache 256GB hardware and software support. These systems can be preconfigured in the factory with Flash Cache 256GB. Also, customers who already have FAS/V3210 and FAS/V3240 in the field are able to order Flash Cache 256GB hardware and software.

FAS/V3240, FAS/V3270, FAS/V6200, SA620 and SA320 systems now offer Flash Cache 512GB hardware and software support. These systems can be preconfigured in the factory with Flash Cache 512GB. Also, customers who already have FAS/V3240 and FAS/V3270, FAS/V6200, or SA620 in the field are able to order Flash Cache 512GB hardware and software.

3. Sales and Customer-Ready Tools (Training, SE, Customer Presentations, Datasheets, Sales Guides)

Beginning with the Data ONTAP 7.3.2 release, the Flash Cache 256GB and 512GB module has been available in a number of systems. Many of the existing “PAM” documents have been converted to “Flash Cache” documents. To access the following informative presentations, guides, and more, click the [NetApp Sales](#) and [NetApp Partners](#) links.

- Sales Training for Flash Cache
- Flash Cache Product Essentials
- Flash Cache SE Presentation
- FAQ for Flash Cache
- Audio Sales Training for Flash Cache
- Datasheets

4. System Requirements

Support for Flash Cache started with Data ONTAP 7.3.2, but not all supported systems with Flash Cache combination are supported with this Data ONTAP release. The following table lists the supported platforms, the Data ONTAP release, and the maximum number of caches that can be configured.

Modules per Controller FAS/V- Series	Data ONTAP	Flash Cache 256GB	Flash Cache 512GB
FAS6080A/V6080A	7.3.2+ 8.0.1+	N/A	4TB 8 modules

FAS6040A/V6040A FAS3170A/V3170A	7.3.2+ 8.0.1+	N/A	2TB 4 modules
FAS3070A/V3070A FAS3160A/V3160A	7.3.2+ 8.0.1+	1TB 4 modules	N/A
FAS3140A/V3140A	7.3.2+ 8.0.1+	512GB 2 modules	N/A
FAS6070A/V6070A SA600A	7.3.3+ 8.0.1+	N/A	4TB 8 Modules
FAS/V3210	8.0.1+	512GB 2 modules	
FAS/V3240A*	8.0.1+	1TB 4 modules	1TB 2 modules
FAS/V3270A SA320/SA320A	8.0.1+	N/A	2TB 4 modules
FAS/V6210A	8.0.1+	N/A	3TB 6 modules
FAS/V6240A	8.0.1+	N/A	6TB 12 modules
FAS/V6280A SA620/SA620A	8.0.1+	N/A	8TB 16 modules

*Either 256GB OR 512GB modules can be configured in the FAS3240A.

Note: Data ONTAP 8.0 GA will not support Flash Cache modules.

5. Product Information

Flash Cache has a license based on the storage system. The following table lists the software and hardware part numbers.

Part Number	Description	Discount Category Code
SW-T3-PAMII	PAMII Software, T3	J
SW-T3-PAMII-C	PAMII Software, T3, -C	J
SW-T3C-PAMII	PAMII Software, T3	J
SW-T3C-PAMII-C	PAMII Software, T3, -C	J
SW-T4-PAMII	PAMII Software, T4	J
SW-T4-PAMII-C	PAMII Software, T4, -C	J
SW-T4C-PAMII	PAMII Software, T4	J

SW-T4C-PAMII-C	PAMII Software, T4, -C	J
SW-T5-PAMII	PAMII Software, T5	J
SW-T5-PAMII-C	PAMII Software, T5, -C	J
SW-T5C-PAMII	PAMII Software, T5	J
SW-T5C-PAMII-C	PAMII Software, T5, -C	J
SW-T6-PAMII	PAMII Software, T6	J
SW-T6-PAMII-C	PAMII Software, T6, -C	J
SW-T6C-PAMII	PAMII Software, T6	J
SW-T6C-PAMII-C	PAMII Software, T6, -C	J
SW-T7-PAMII	PAMII Software, T7	J
SW-T7-PAMII-C	PAMII Software, T7, -C	J
SW-T7C-PAMII	PAMII Software, T7	J
SW-T7C-PAMII-C	PAMII Software, T7, -C	J
X1937A-R5-C	ADPT, Flash Cache, PCIe, 256GB,-C,R5	A
X1937A-R5	ADPT, Flash Cache, PCIe, 256GB,R5	A
X1938A-R5-C	ADPT, Flash Cache, PCIe, 512GB,-C,R5	A
X1938A-R5	ADPT, Flash Cache, PCIe, 512GB,R5	A
X1938A-PBNDL-R5	ADPT,Flash Cache,PCIe,512GB,SupportEdge INC,R5	A
X1938A-PBNDLR-R5	ADPT,Flash Cache,PCIe,512GB,SupportEdge,INC,R5	A

Part Number	Description	Discount Category Code
SW-3210-PAMII	SW,PAMII,3210	J
SW-3210-PAMII-C	SW,PAMII,3210,-C	J
SW-3210A-PAMII	SW,PAMII,3210A	J
SW-3210A-PAMII-C	SW,PAMII,3210A,-C	J
SW-3240-PAMII	SW,PAMII,3240	J
SW-3240-PAMII-C	SW,PAMII,3240,-C	J
SW-3240A-PAMII	SW,PAMII,3240A	J
SW-3240A-PAMII-C	SW,PAMII,3240A,-C	J
SW-3260-PAMII-C	SW,PAMII,3260,-C	J
SW-3260A-PAMII-C	SW,PAMII,3260A,-C	J
SW-3270-PAMII	SW,PAMII,3270	J

SW-3270-PAMII-C	SW,PAMII,3270,-C	J
SW-3270A-PAMII	SW,PAMII,3270A	J
SW-3270A-PAMII-C	SW,PAMII,3270AA,-C	J
SW-6210-PAMII	SW,PAMII,6210	J
SW-6210-PAMII-C	SW,PAMII,6210,-C	J
SW-6210A-PAMII	SW,PAMII,6210A	J
SW-6210A-PAMII-C	SW,PAMII,6210A,-C	J
SW-6240-PAMII	SW,PAMII,6410	J
SW-6240-PAMII-C	SW,PAMII,6240,-C	J
SW-6240A-PAMII	SW,PAMII,6410A	J
SW-6240A-PAMII-C	SW,PAMII,6240A,-C	J
SW-6280-PAMII	SW,PAMII,6280	J
SW-6280-PAMII-C	SW,PAMII,6280,-C	J
SW-6280A-PAMII	SW,PAMII,6280A	J
SW-6280A-PAMII-C	SW,PAMII,6280A,-C	J
SW-SA320-PAMII	SW,PAMII,SA320	J
SW-SA320-PAMII-C	SW,PAMII,SA320,-C	J
SW-SA320A-PAMII	SW,PAMII,SA320A	J
SW-SA320A-PAMII-C	SW,PAMII,SA320A,-C	J
SW-SA620-PAMII	SW,PAMII,SA620	J
SW-SA620-PAMII-C	SW,PAMII,SA620,-C	J
SW-SA620A-PAMII	SW,PAMII,SA620A	J
SW-SA620A-PAMII-C	SW,PAMII,SA620A,-C	J

Note: X1938A-PBNDL-R5 and X1938A-PBNDLR-R5 include 36 months of SupportEdge Premium 4-hour priced into the Flash Cache card and are output whenever Flash Cache solutions are selected in FAS6080 active-active configurations, which always include SupportEdge Premium service in the price of the system configuration. The X1938A-PBNDL-R5 is used for the direct sales model, and the X1938A-PBNDLR-R5 is used for the reseller model.

Quoting

For detailed instructions on how to quote this product or service using the Quote Tool, go to the NetApp Field Portal and search on QTB-PAMI-II.

Downloading

To download software, go to [NOW™ Download Software](#).

Product Availability

Flash Cache has been available since August 2009, but starting in the November 2010 Quote Tool, Flash Cache is made available on FAS/V3200, FAS/V6200, and SA620 systems.

6. Regulatory Compliance

Products need to be validated against the NetApp Safety/EMI Regulatory Compliance List prior to order submission. This is required to make sure that products are being sold only in the countries in which NetApp has received regulatory compliance certification. This information can be found in the Field Portal by searching under “Compliance, Policies, and Procedures” or by following these links:

- [RoHS Compliance](#)
- [Safety/EMI Regulatory Compliance \(XLS\)](#)
- [WEEE Compliance](#)

7. Warranty and Service

Flash Cache provides warranty and service that are independent of the controller in which it will be installed. However, the Flash Cache warranty does provide the same basic and extended options that are available for the controller.

8. Additional Information

Contact information: Please contact your NetApp sales or channel partner representative with questions concerning this bulletin.

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495 E. Java Drive, Sunnyvale, CA 94089 USA