The OpenSSD Project

From OpenSSDWiki

The OpenSSD Project is an initiative to promote research and education on the recent SSD (Solid State Drive) technology by providing easy access to *OpenSSD platforms* on which open source SSD firmware can be developed. Currently, we have offered an OpenSSD platform based on the commercially successful Barefoot™ controller from Indilinx Co., Ltd. (http://www.indilinx.com) In addition, we now support an FPGA-based OpenSSD platform whose hardware and software designs are modifiable. This site is also intended to be a forum to share various simulators, tools, and workload generators and traces related to SSDs, among researchers in academia and industry.

Contents

OpenSSD Platforms

New!!! Cosmos+ OpenSSD Platform

The Cosmos+ Platform is yet another PCIe-based SSD platform based on the HYU Tiger4 controller. The HYU Tiger4 controller supports a subset of the **NVMe interface protocol**. In fact, the platform board is the same as the Cosmos Platform, but with a different storage controller (HYU Tiger4) in FPGA (you can upgrade the board by yourself). However, the Cosmos+ OpenSSD requires **new memory modules** (w/ toggle NANDs). It is because the recent NAND flash devices we can get support only toggle-mode interface. For further details on the Cosmos+ Platform, please refer to the following material presented at Flash Memory Summit 2016 (http://www.flashmemorysummit.com) .

Cosmos OpenSSD Platform

The Cosmos Platform is a PCIe-based SSD platform based on the HYU Tiger3 controller. The HYU Tiger3 controller is developed by ENC (Embedded and Network Computing) Lab. (http://enc.hanyang.ac.kr) led by Prof. Yong Ho Song at Hanyang University, Korea. For further details on the Cosmos Platform, please refer to the following material presented at Flash Memory Summit 2014 (http://www.flashmemorysummit.com) . The Cosmos platform is available for purchase.

- Cosmos Platform Overview
- Cosmos Platform Technical Resources
- Cosmos OpenSSD: A PCIe-based Open Source SSD Platform, Flash Memory Summit, August 2014.
- A PCIe-based Open Source SSD Platform for SSD Architecture Exploration, KIISE Newsletter, December 2014. (in Korean)
- Purchasing Information

Jasmine OpenSSD Platform

The Indilinx Jasmine Platform is the Indilinx's reference implementation of SSD based on the Barefoot™ controller. The Indilinx's Barefoot™ controller is an ARM-based SATA controller used in numerous high-performance SSDs such as Corsair Memory's Extreme/Nova, Crucial Technology's M225, G.Skill's Falcon, A-RAM's Pro series, OCZ's Vertex/Vertex Turbo/Agility/Solid II, Patriot Memory's Torqx/Koi, RunCore's IV, SuperTanlent's Ultradrive ME/GX, etc.[1] For more information on the Indilinx Jasmine Platform, please visit the following pages:

- Jasmine Platform Overview
- Jasmine Platform FAQs
- Jasmine Platform Technical Resources
- Download Jasmine Firmware
- Purchasing Information

[Important Notice] You should send a mail to the administrator to create an account. For further details, please refer to the corresponding Forum article (http://www.openssd-project.org/wiki/Special:AWCforum/st/id86) .

Events

Past Events

- Understanding SSDs (Solid State Drives) with the OpenSSD Platform, KCC 2011 Tutorial T2.3 (http://www.kiise.or.kr/conference02/cf01/index.asp?conference_code=2&c_type1=87) , Kyeongju, Korea, June 30, 2011.
- The First OpenSSD Workshop, Sungkyunkwan University, Suwon, Korea, May 11, 2011.

Forum

News and Updates

Thread Title	Replies	Views	Last Action
Cosmos OpenSSD NVMe RAM Disk v0.01 released	0	4734	Oct 2nd 6:11 am - Enclab
New ! Cosmos OpenSSD RTL/FTL Sources have been released!	0	4463	Apr 2nd 4:09 am - Enclab
User creation policy changed	0	8126	May 14th 4:49 am - Jinsoo
Jasmine firmware v.1.1.0 has been released	0	6835	Dec 16th 9:18 am - Lsfeel0204
Jasmine firmware v.1.0.6 released	0	5241	Jun 25th 4:03 am - Lsfeel0204
Barefoot SSD controller technical reference manual (in English) released	1	8236	Jun 18th 4:03 pm - Jinsoo
Jasmine firmware v.1.0.5 released	0	5750	May 31st 9:20 pm - Lsfeel0204

Latest posts:

Thread Title	Replies	Views	Last Action
Writing out of order to physical pages	0	1999	Apr 24th 2:17 am - Abhishekjoshi
Jasmine with C++	0	2201	Mar 13th 10:02 pm - Abhishekjoshi
Question about bad blocks	0	2099	Mar 3rd 2:06 am - Abhishekjoshi
Off-by-one in tutorial FTL	1	3586	Mar 3rd 1:05 am - Abhishekjoshi
Questions about Jasmine strating	0	2853	Dec 15th 12:36 pm - Xiaoming644
Can the Firmware be complied in the ARM Workbench IDE?	2	9219	May 25th 5:02 am - Jsj
power consumption	0	4675	Oct 15th 8:01 am - Kraiem

References

1. ↑ http://en.wikipedia.org/wiki/Indilinx, Retrieved 2011-02-25.

Sponsors

This project was sponsored by INDILINX. We are seeking other SSD manufacturers or research groups to participate in our OpenSSD activities. Please contact **openssd@gmail.com** for further details. This homepage is being maintained by Computer Systems Laboratory (http://csl.skku.edu) at Sungkyunkwan University (http://www.skku.edu/eng) .

Whos here now: **Members** 0 **Guests** 3 **Bots & Crawlers** 1