Facebook: All of the Tech Specs

I have recently been doing some research into what Facebook uses to run and store data for their ever-growing company.

The storage that Facebook uses is called Haystack. Haystack is deployed on top of commodity storage blades. The typical hardware configuration of a 2U storage blade is: 2 x quad-core CPUs, 16GB – 32GB memory, hardware raid controller with 256MB – 512MB of NVRAM cache, and 12+ 1TB SATA drives. Each storage blade provides around 10TB of usable space, configured as a RAID-6 partition managed by the hardware RAID controller. This is mainly what Facebook uses for storing their data with photos, users and so forth.

The motherboard and server design for Facebook was done all in-house to further maximize their profit and to also bring down their energy usage.

The Open Compute motherboards try to save on power for low capital cost and many features have been removed because of this. The OCP specification for the AMD v2.0 motherboard is a dual AMD G34 socket motherboard with 16 DIMM slots. The high availability (HA) server leverages the Intel Motherboard Hardware Specification v2.0. Instead of accommodating two server motherboard trays with one shared PSU, it accommodates one server motherboard tray with one PSU tray holding two PSUs.

The OCP specification for the Intel v2.0 motherboard uses two Intel® Xeon® E5-2600 processors and 16 DIMM slots per board. Facebook developed a server for Open Rack that uses the Intel v2.0 motherboard code-named (Windmill).

HipHop on Facebook

HipHop converts PHP into heavily optimized C++ code, which can then be compiled into an efficient native binary. When Facebook unveiled HipHop to the public in 2010 and began distributing it under an open source software license, the company's engineers reported that it reduced average CPU consumption on Facebook by roughly 50 percent. Facebook has achieved more than a 6x reduction in CPU utilization for the site using HipHop as compared with Zend PHP.

HipHop is currently under heavy development and we only actively test on the Ubuntu distribution. Building procedures should be fairly similar on other linux distros, and support for FreeBSD and Mac OS X will be coming shortly after the retirement of HPHPc.