

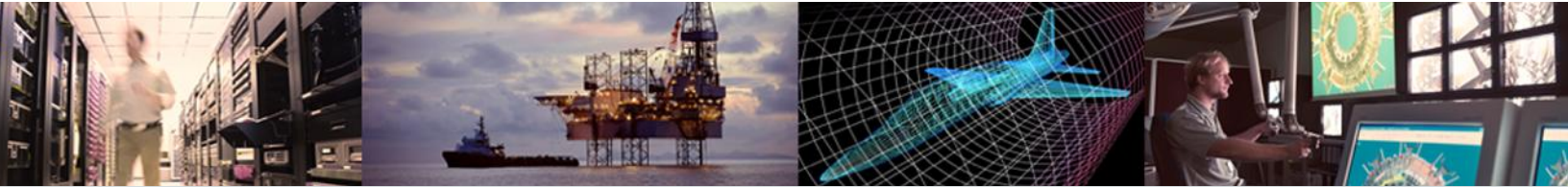
# Case Study

myYearbook Social Networking



## Social Networking with Solarflare

myYearbook Deploys Solarflare within its Ethernet Infrastructure



myYearbook recently upgraded its infrastructure with Solarflare's 10G Ethernet server adapters to improve performance while leveraging a common base of Linux-based Ethernet tools, expertise, and management.

### **Memcached Servers Accelerate Web Sites**

*Memcached is a high performance, distributed memory caching system which improves the performance of dynamic web applications by reducing the requirements of servers to access the database and storage tiers within the data center.*

*Memcached can be used to provide a large virtual object-based cache accessible to all server and can dramatically reduce dynamic content access times.*

myYearbook is an innovative and rapidly growing social media site where members meet others, play games, earn and spend virtual currency, and interact using video.

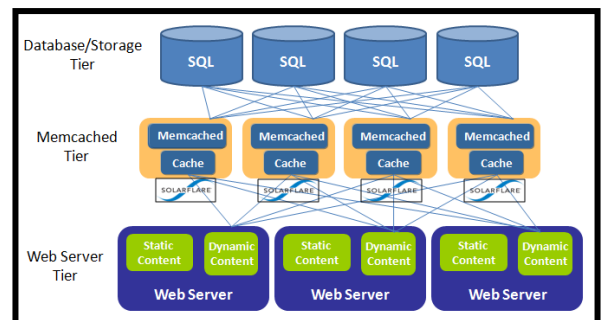
As the popularity of its services has skyrocketed, myYearbook has learned to manage the extraordinary demands caused by the explosive growth in traffic to its site. To do so, its engineers need to stay ahead of the curve on the deployment of leading edge technologies which both meet its current performance demands, but also provide some headroom for growth.

myYearbook deployed Solarflare's 10G Ethernet NIC adapters at the same time as a planned Linux kernel upgrade. "For performance reasons, we like to stay close to the bleeding edge of Linux kernel development", said Jeremy Stinson, VP of Network Operations at myYearbook. "We were impressed that

Solarflare's NICs worked out of the box on our new kernel".

The Solarflare SFN5122F NICs also performed tremendously well and required very little tuning to achieve high-performance for memcached and flash media server workloads. The NICs were quickly brought online into the full production environment and have since operated flawlessly.

"The Solarflare driver is very easy to use and offered great core scaling features. Their receive side scaling (RSS) implementation made it straightforward for us to balance our workload over all CPU cores and maximize performance", recalls Stinson.



As myYearbook engineers explored more advanced features, they continued to be impressed. First they discovered that Solarflare has been supporting the Ethtool project, a key Linux management tool. Then they discovered that Solarflare has been doing great work to implement scheduler-aware, hardware-accelerated flow steering. They are looking forward to trying this out in the 2.6.39 kernel.

myYearbook's production infrastructure consists of approximately 600 web servers which support its 25 million users. With this are approximately 20 flash media servers delivering video and around 100 memcached servers. The memcached servers provide a high-performance data caching layer that stores over 100 billion items that are delivered at a rate of over 300 thousand requests per second to the myYearbook application stack.

### SOLARFLARE ACCELERATES MEMCACHED SERVERS BY 51%

While myYearbook was happy with the out of the box experience with Solarflare, the company's engineers also wanted to try the OpenOnload application acceleration middleware. They performed a simple experiment using the memslap micro-benchmark, and were impressed with their results:

#### Server:

```
in /etc/init.d/memcached
..
export EF_POLL_USEC=1000
export EF_FDS_MT_SAFE=0
export EF_BUZZ_USEC=-1
export EF_EPCACHE_MAX=1000
export EF_NETIF_COUNT=8
..
onload memcached -d -p $PORT -u $USER -m $CACHESIZE -c $MAXCONN -P
/var/run/memcached/memcached.pid $OPTIONS
```

#### Client:

```
export EF_POLL_USEC=1000
export EF_FDS_MT_SAFE=0
export EF_BUZZ_USEC=-1
export EF_EPCACHE_MAX=1000
export EF_NETIF_COUNT=8
onload memslap -s <IPADDR> -S 15s -t 1h -T 8
```

myYearbook found that the average response times at 212K transactions per second was improved by 51% from 134us to 65us. In this experiment, the most critical of the OpenOnload tuning parameters was EF\_POLL\_USEC=1000 - this enabled the OpenOnload library to spin at user-space for up to 1ms when it would otherwise block.

"I love the fact that Solarflare allows us to keep our options open as we constantly grow our infrastructure and our business," says Stinson. "By providing higher throughputs at lower latencies than our previous NICs, we are able to provide a better user experience and reduce bottlenecks between our applications and critical data layers."