Subject:	Re: Ordering the HPC equipment for Pomona College
Date:	Wednesday, April 11, 2018 at 11:18:57 AM Pacific Daylight Time
From:	Samantha Wheeler
To:	Asya Shklyar
Attachments:	image001.jpg

Sorry - I should have written it like this. IP over IB is a supported feature, but the EDR switches no longer do both so it does not need a license. The exact phrasing was:

"No license necessary, licensing only came into play in our older FDR/40 GB switches. 100/EDR switches cannot do both."

I possibly misunderstood the goal/network design. My understanding was to configure with dual port VPI cards, get the Ethernet network up and running and then add IB later.

From a cost perspective, Ethernet typically is more expensive when you get into the faster data rates. However, be aware that running IP over IB has a measurable overhead.

Did that clarify things? I apologize for any confusion on my part.

Samantha

On 4/11/2018 1:51 PM, Asya Shklyar wrote:

> Samantha, thank you for getting these to us. I am wondering about the EDR switch. Did not expect it to be so cheap. In the past I ran into issues with Infiniband switches (VPX) as they typically require a software license to enable Ethernet. Is it the case with this one as well?
>
> I am sitting down with our business manager to discuss the latest quote in a half hour so she should reach out today and get the process started.
>
> Asya
>
> Get Outlook for iOS
>
> ---
>
> **From:** Samantha Wheeler <swheeler@microway.com>
> **Sent:** Tuesday, April 10, 2018 12:19:40 PM
> **To:** Asya Shklyar
> **Subject:** Re: Ordering the HPC equipment for Pomona College
>
>
> Hi Asya,
>
> Here are the updates:
>
> - MWYQ23588 - Pomona HPC Deployment (with changes made to each system)
> - MWYQ23595 - SN2700C 100G Ethernet Switch and cables
> - MWYQ23598 - EDR InfinBand Fabric (no license required - they stopped licensing after FDR, it's now a feature)
>
> Also, I updated the DGX Station to the one with V100 32GB since they are the same price. The individual GPU prices went up, but the DGX prices stayed the same.

Let me know if you have questions or see anything you need changed.

Samantha

On 4/4/2018 1:55 PM, Asya Shklyar wrote:

Samantha, thanks for getting back to me so quickly!

If you can do an SN2700C on a separate quote, and replace the ConnectX-3s with ConnectX-5s on the main quote that would be perfect.

Then the EDR IB on a separate quote. This would probably include software licenses for IB/Ethernet (VPX)? The server cards would stay the same, right?
We will likely move with the original config (with the change to ConnectX-5)
to speed this up as I really would like to have a functioning environment before the summer for the summer research programs. And before the tariffs on electronics kick in.

Understood about BeeGFS. And I agree. Still would like to see a quote for 10-20 TB to understand what kind of hardware is involved and have an idea about what the software/support costs. If this is not too much trouble. No rush on this.

Asya

Get [Outlook for iOS](#)

From: Samantha Wheeler [<swheeler@microway.com>](mailto:swheeler@microway.com)
Sent: Wednesday, April 4, 2018 9:04:16 AM
To: Asya Shklyar
Subject: Re: Ordering the HPC equipment for Pomona College

Hi Asya,

Thank you very much for sending this over. I will get started on this but might not have this back to you for a day or two. Do you want the SN2700C included or on a separate quote? I agree with going 100G to start for future proofing's sake.

Do you want to stay with Ethernet or move to IB? The SN2700C is about ~$25K where the EDR IB switch is ~$16K, before discounts. There is also a small premium on the ethernet adapters. I understand that this may not fit your design/need, but I at least wanted to make you aware of the costs.

The problem I had with the BeeGFS config was getting it below the $50K mark without sacrificing performance. Because you had the M10 and seemed to lean toward that, I have pursued the partnership with PureStorage. We have a meeting with them today to discuss next steps. I can revisit the BeeGFS config and present a reasonable compromise, but I don't believe I can meet that dollar mark successfully.

Feel free to ping me with thoughts, and I will do the same as I start to put this together. Otherwise, you should hear from me in the next day or two.

Best,

Samantha

On 4/3/2018 11:39 PM, Asya Shklyar wrote:

Hello Samantha,

We have finalized the list of equipment we are going to order (ideally all of these, minus Pure, should be well under $200K incl tax which according to my calculations so far is doable):

These are all from your quotes. I am also attaching a schematic.

- One NVIDIA DGX workstation with 1 year support (it helped that you discounted it so heavily, the quote I have is $46,775 and after GTC I was convinced we need access to NVIDIA support although I am still interested in a Microway/SuperMicro configuration with 2 V100s and NVLINK, see the one below). Cole had been talked into it ☺

- One NumberSmasher Intel Skylake/2.60 Ghz 12 core -based server + two V100s with NVLINK + 768 GB RAM + dual ConnectX-3, so $40,399-$14,946+$9,396=$34,849 (there was no option in the quote for dual ConnectX-3?) with pre-installed CentOS and NVIDIA software. Does this have an NVMe SSD option? If yes, I feel like it needs one.

- One NumberSmasher Broadwell/Xeon-based high core count server with one P100 (but if you/NVIDIA want to give us more P100s I will not say No) with 512 GB RAM, dual-port Ethernet, 2 TB NVMe drive, additional 240 GB SSD for OS RAID for a total of 2 (it looks like the quote had only one), so $19,532+$76+$1,901+$3,064=$24,573

- One Broadwell/Xeon-based high Ghz server with one P100, 512 GB of RAM, dual ConnectX-3, so $12,422+$3,064+$76=$15,562

- One AMD Epyc-based Navion server with one V100, 512 GB RAM, dual ConnectX-3, 2 TB NVMe, so $25,308+$76+$1,901=$27,285

- Two Mellanox SN2700B with 32 QSFP+ cables total (two for separating storage/compute and redundancy; and we don't currently need 64 cables, trying to keep the cost down), $15,531+$10,000 (estimating the cost of just adding another SN2700B without cables)

- 20 Bright licenses with 1 year support, $2,880

I come up with $177,455. Obviously once you go through the exercise the number will change but this is looking really good.

We are currently doing a POC with Pure M10 so if in the next 30-60 days you do become a reseller we would also get the storage from you especially if you can be more competitive than $50K for 10 TB. I am still waiting for that BeeGFS setup. It is possible we would go with that instead or in addition.

The idea for all of these is to basically have one of each to optimize our "building blocks" going forward and potentially use this as a blueprint for other environments.
I am planning to monitor closely what is run on the cluster and how and would love to collaborate on this.

I was told that ConnectX-5 is comparable in price with ConnectX-3. Would they be an option? I am trying to future-proof this for when we do get a 100 GB- capable switch.
Also, if it is not too much trouble, could you quote a 100 GB-capable SN2700C? No rush on this but I am being asked.

The next steps:

- Getting all of this equipment (minus Pure for now) on the same quote, with the correct parts and close to the target number. I am specifying all of the configuration options that were not standard/included in the base system in this email. I am available to get on the phone if necessary to clarify.
- Get you connected with our business manager – Angelina - that will be handling all the paperwork. I will CC her and Cole once I have the final quote with all the correct parts.

I am looking forward to working with you!

Pomona College

Asya Shklyar, Director of HPC

Information Technology Services
156 East Seventh Street
Claremont, CA 91711
www.pomona.edu

Phone: 909.607.9853
asya.shklyar@pomona.edu

--
Samantha Wheeler | Technical Sales Engineer
508.732.5526 | swheeler@microway.com | www.microway.com

--

Samantha Wheeler | Technical Sales Engineer
508.732.5526 | swheeler@microway.com | www.microway.com

--

Samantha Wheeler | Technical Sales Engineer
508.732.5526 | swheeler@microway.com | www.microway.com