Results of the FY12 User Survey for the Lattice QCD (LQCD) Computing Facility

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Change Log

Version	Description	Effective Date
0.1	Initial draft version.	01/31/2013
0.2	Revised draft version.	04/13/2013
1.0	Published version.	04/29/2013

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LQCD-ext Computing Project FY12 User Survey Results

1. Overview

In order to serve the USQCD user community in the best possible manner, anonymous online surveys are conducted on an annual basis to quantify the level of user satisfaction with the services provided by the LQCD computing project facilities. The LQCD-ext Integrated Project Team (IPT) uses the results of these surveys to identify ways to improve and optimize services using the limited resources available to the project

Annual surveys have been conducted since 2007, with results summarized in written reports. The FY2012 survey was conducted during the fall of 2012. Results of the FY12 survey are presented in this document.

2. Executive Summary

The FY12 User Survey was released to the collaboration on October 3 and closed on December 3, 2013, and was designed to measure user satisfaction during the 12 month period from October 2011 through September 2012 (i.e., fiscal year 2012). The online survey consisted of 25 questions designed to measure the level of satisfaction with the compute facilities operated and managed by the LQCD project team, and with the annual resource allocation process conducted and managed by the USQCD Scientific Program Committee.

The survey was distributed to all scientific members of the USQCD collaboration, with a particular focus on obtaining input from active users who had submitted compute jobs to one of the three host facilities during the year. Technical staff who are members of the collaboration, and who are also directly involved with operations at one of the host sites, are excluded from survey participation since they are not considered facility "users."

The FY12 survey was distributed to a total of 163 individuals; of these, responses were received from 76 individuals. By comparison, 61 individuals responded to the FY11 survey. Thus, we realized a 25% increase in the number of people participating in the FY12 survey. Regarding active user participation, we received responses from 45 of 85 active users (53% response rate).

Questions related to facility operations were designed to quantify the level of satisfaction on a per-site basis. Results were then aggregated to obtain an overall score for the project. Table 1 shows the aggregate scores for the key facility measurement areas over time. In all areas, satisfaction ratings in FY12 were about the same or exceeded ratings from the previous year. In particular, the overall satisfaction rating was noticeably improved again in FY12 and exceeded the target goal of ≥92%.

Table 1. Satisfaction Ratings for Compute Facility Operations

Category	FY07	FY08	FY09	FY10	FY11	FY12
Overall Satisfaction	82%	91%	96%	81%	87%	93%
System Reliability	74%	90%	84%	76%	91%	89%
Ease of Access	73%	74%	77%	76%	83%	92%
User Support	86%	100%	92%	88%	92%	94%
User Documentation	78%	92%	81%	73%	81%	89%
Responsiveness of Site Staff	89%	97%	98%	90%	90%	92%
Effectiveness of Other Tools	77%	72%	83%	86%	88%	92%

Questions related to the annual allocation process operations were designed to gauge the level of satisfaction with several aspects of the allocation process, from the clarity of the Call for Proposals, through the transparency and fairness of the allocation process, to the extent to which the process maximizes scientific output. Table 2 shows the aggregate scores for the key measurement areas over time.

Table 2. Satisfaction Ratings for the Resource Allocation Process

Category	FY07	FY08	FY09	FY10	FY11	FY12
Overall Satisfaction with Proposal Process	69%	81%	84%	86%	84%	83%
Clarity of the Call for Proposals	79%	91%	93%	93%	93%	94%
Transparency of Allocation Process	61%	64%	79%	86%	74%	86%
Apparent Fairness of Allocation Process	63%	73%	88%	86%	93%	86%
Belief that Allocation Process helps maximize scientific output	70%	78%	85%	79%	88%	80%

The overall satisfaction rating dropped slightly from 84% in FY11 to 83% in FY12. Given the small statistical sample for this data set, we believe the slight decrease is not statistically significant. Satisfaction with the transparency of the allocation process increased significantly over last year and was more in line with the FY10 rating. However, of concern are the notable decreases in the rating for the apparent fairness of the allocation process, and the belief that the allocation process helps maximize scientific output. Several free-form comments provided by survey respondents indicate that some effort may be necessary to further improve the perceived fairness of the allocation process and the effectiveness of the process in maximizing scientific output.

The following sections of this document describe the survey methodology, summarize the survey results, and provide an initial analysis of the survey data. Results of this survey are shared with the LQCD-ext Integrated Project Team for further analysis and follow-up action to identify areas for potential improvement and to implement corrective actions.

3. Survey Methodology

The survey, targeted toward users of the LQCD Computing Facility, was executed using the SurveyMonkey online service (surveymonkey.com). General requirements for the survey are that the online survey be easily accessible by members of the collaboration for a finite length of time, and that user responses remain anonymous to those analyzing and using survey results.

The target audience for the survey includes member of the USQCD collaboration (e.g., Principle Investigators, faculty members, researchers, students and post-docs) who submit jobs to the LQCD Computing Facility at any of the three host sites, BNL, FNAL, and JLab; and/or who participate in the annual resource allocation process.

Section 8 contains the list of questions included in the FY12 survey. The survey contained a total of 25 questions, many of which included sub-questions specific to the host laboratories. Answers to some of the questions had alphanumeric values. For subjective questions, we asked users to choose a satisfaction rating from 1 to 5, with 5 being "very satisfied" and 1 being "very unsatisfied." For the subjective ratings, rankings of 4 and 5 were used to infer satisfaction.

Users were also asked to provide short comments in several categories. Comments are included in this report verbatim. In some cases, these comments highlight areas of strong performance. In other cases, these comments reveal underlying issues and are helpful in identifying areas requiring possible improvement.

Graphical views of the data collected and tabulated are given in the section titled "Detailed Analysis." Since the number of users using the various facilities varies significantly, the statistical data for subjective ratings presented are normalized for each laboratory to remove any bias.

It is important to put forth a word of caution regarding inferences from survey results. Since the total population of users is relatively small, as is the sample size of survey respondents, outliers may affect the results of the survey significantly. A single unsatisfied customer may affect the satisfaction ranking for an area.

4. Survey Results

A comprehensive set of questions for the FY12 survey was defined by the project team in collaboration with the USQCD Executive Committee and the Scientific Program Committee. The questions were designed to identify the performance of the individual facilities, namely, the operation and management of the compute clusters at FNAL and JLab. Because the QCDOC machine at BNL was decommissioned at the end of FY11, there were no LQCD project resources in production use at BNL in FY12. Accordingly, there were no survey questions related to BNL operations.

Although each site is managed by a dedicated site manager following host laboratory policies and procedures, the site managers at all three facilities work closely together to fulfill the collective goals of the project and to share best practices.

A total of 25 questions were presented to the users and a total of 76 users completed the survey. A summary of the survey results for each category is given below:

1. General: Questions under this category are designed to collect demographic data of the user community.
    a. Among the total of 76 respondents, 61 users are employed by a university or a college, the rest are mostly employed by the participating laboratories.
    b. 25 users are faculty members. Post docs and grad students make up a significant portion of the rest.
    c. 28 users submit jobs daily. 22 users submit jobs occasionally or never.
    d. The most common submission rate by users is in the 1 to 10 jobs per week range.
    e. Among respondents, 43 users submitted jobs at FNAL, 23 users submitted jobs at JLab, and 7 users submitted jobs at BNL.

2. User satisfaction: Overall satisfaction rating for the FY12 survey is 93%. Ratings associated with these questions assessed the overall user satisfaction with the LQCD facility and related satisfaction levels related to documentation, user support, system reliability, responsiveness of site support, accessibility, and tools support. As with other years, the overall satisfaction rating for the LQCD facility is determined by the number of ratings of 4 and 5 given by the participants. Ratings are normalized by the number of users associated with each laboratory. Detailed ratings by host site are given below.

Table 3. User Satisfaction Ratings for Compute Facilities, by Site

	BNL	FNAL	JLab
Overall satisfaction	-	100%	76%
Documentation	-	92%	84%
User support	-	100%	79%
Reliability	-	97%	69%
Responsiveness	-	99%	77%
Ease of access	-	94%	88%
Tools support	-	92%	91%

3. Allocation process: Questions associated with the allocation process are designed to assess different aspects of the computing resource allocation process. They are associated with allocation process itself, clarity of call for proposals (CFP), allocation transparency fairness, and achieving the goal of maximizing the scientific output through allocation process.

Table 4. User Satisfaction Ratings for the Allocation Process

	Rating
Allocation process	83%
CFP clarity	94%
Allocation transparency	86%
Allocation fairness	86%
Maximizing scientific output	80%

4. Helpdesk: All three LQCD facilities operate site-specific helpdesks. Several questions were posed to determine the usage and efficacy of the helpdesk at each site. After determining the awareness of the existence of the helpdesk, users were asked to rate their satisfaction regarding the last helpdesk request they submitted in terms of time to initial response and close out of the helpdesk ticket, and the level of satisfaction with the helpdesk request. This year, 98% of users knew how to ask for help, which is the highest rating received in this category since we started taking surveys. Users were asked to consider the last problem report they submitted, when responding to the helpdesk questions. The responses to the evaluation of the last problem report is given below:
    a. The normalized spread of the helpdesk request submission among FNAL and JLab is 56% and 23%.
    b. 42 of the 51 (82%) respondents received an initial response to their request for help within 1 working day.
    c. 80% of problems were solved using the initial response. For those problems that weren't immediately resolved, 58% were resolved within one day and about 84% of the problems were solved within 3 days. Of the problems that take longer to resolve, it is been observed that a small fraction of problems require system modifications and may not be resolved for months.

5. Survey Analysis

Items with normalized subjective rating less than 80% are considered issues requiring further analysis and attention. Using this criterion, the following conclusions may be drawn from our analysis of the survey data.

OVERALL: The overall satisfaction rating for the LQCD metafacility was 93%, which exceeds our target rating of 92%. The following graph shows the overall rating score over the past six years, and shows continued improvement in the overall rating score over the past several years.

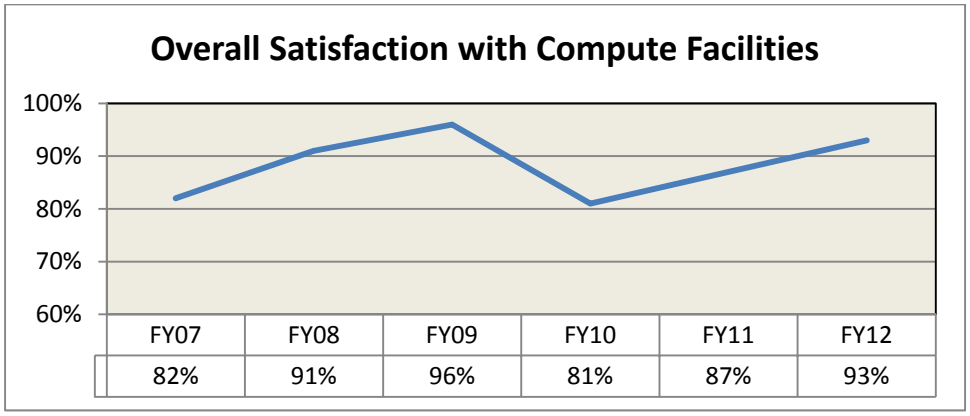


Figure 1. Overall Satisfaction Rating with LQCD Compute Facilities.

BNL: As earlier noted, since there were no compute facilities in production use at BNL in FY12, there were no survey questions related to BNL site performance.

FNAL: FNAL received very high marks in a number of areas related to user satisfaction, user support, responsiveness, and system reliability, as shown in Table 5. In all categories, FNAL received satisfaction ratings of 92% or better.

Table 5. User Satisfaction Ratings for the FNAL Host Site

	FNAL
Overall satisfaction	100%
Documentation	92%
User support	100%
Reliability	97%
Responsiveness	99%
Ease of access	94%
Tools support	92%

Like other years, FNAL did not do as well in the accessibility area due to Kerberos authentication issues, which was noted in a couple of the free-form comments submitted by users. By laboratory policy, driven by the DOE mandates for strong authentication, all outside access via the internet to Fermilab LQCD systems requires the use of Kerberos authentication. Kerberos software is available on all major operating systems, but it is not widely used; further, site-specific configuration of the clients is necessary to access the LQCD systems. With respect to Kerberos configuration, the Fermilab Computing Sector only officially supports certain versions of Linux (Scientific Linux, based on Red Hat Enterprise Linux), of Apple OSX ("Leopard", "Snow Leopard", and "Lion"), and of Windows (XP and Windows 7). Since many users of our facilities do not use these specific operating system instances, the Fermilab LQCD staff provides additional documentation and support as necessary. In many cases, such support requires many steps and direct interactions with the users to isolate and solve any configuration issues. The level of support to help users is apparently paying off, as one user commented that although Kerberos “is a huge pain”, once it’s setup it is fine.

Regarding system reliability, the mandatory load sheds at Fermilab due to cooling issues during extremely hot periods during the summer were noted by a couple of users in their responses. The load sheds are outside of the control of the LQCD project team, and the FNAL site managers and their staffs take extra measures in attempt to minimize the impact of the load sheds on the LQCD user community.

JLab: JLab’s overall satisfaction rating of 76% was slightly improved over FY11, but is still notably lower that our target goal of 92%. In addition, JLab received low scores in user support, responsiveness, and reliability. JLab’s user satisfaction ratings for our key performance areas are summarized in the following table.

Table 6. User Satisfaction Ratings for the JLab Host Site

	JLab
Overall satisfaction	76%
Documentation	84%
User support	79%
Reliability	69%
Responsiveness	77%
Ease of access	88%
Tools support	91%

The timing of the survey unfortunately coincided with a number of events that had a negative impact on users, including:

- A system administrator was separated from the lab two months prior to the start of the survey, and installation and commissioning of the new 12k and 12m clusters soon after consumed considerable system administration staff time; consequently user support suffered.
- Underutilization of the systems in August and September led to a reduction in allocations (per JLab policy, accepted by USQCD leadership, if utilization falls below 80%, then the lost time is charged to all projects running below 80% of pace). This measure is a reflection of the fact that allocations can't be met if machines sit idle. Although unpopular with some groups, the policy does help motivate users to consume cycles.

In addition, there were a number of operational issues in 2012. Most have now been addressed:

- Offsite login and file transfers remained tightly controlled through the firewall through the time of this survey, including access from only whitelisted hosts. (This tight control was imposed due to a 2011 cyber security incident that hurt operations and users the previous year.) In 2013, JLab deployed Globus Online, which operates without white-listing, making file transfers much easier now.
- GPU systems were upgraded in July 2012 to CentOS 6.2 and the latest version of NVIDIA drivers in anticipation of the new Kepler K20 cluster which required the latest software to run well. Unexpected interoperability issues were discovered with SDR and DDR Infiniband GPU nodes at the CentOS 6.2 OFED release, so those nodes had to be rolled back to CentOS 5.5 while the new K20 nodes were kept at the newest release. These issues only manifested at full scale and were not caught in preliminary testing. The OS changes up and then back down caused many user headaches. When staff could finally be dedicated to resolving this (months later), a solution was eventually found, and now all GPU nodes are running at the same OS and library levels.
- Similarly difficult to produce and difficult to isolate behavior was discovered in the interoperability of QLogic and Mellanox Infiniband components (the 12s cluster installed in March and upgraded in July was the first QLogic hardware at the lab). That eventually required updated drivers and firmware for Mellanox and Intel QLogic cards and switches. (The separated employee was our Infiniband expert, and this was an expert level problem that was slow to isolate in the presence of vendor finger pointing.)

- A new Oracle/SUN home fileserver encountered unforeseen Infiniband problems that only manifested at scale (full production). System hangs when using Infiniband are still unresolved by the vendor and have required reconfiguration back to Ethernet.

For FY2013, budget uncertainties have necessitated leaving the system administrator position vacant, and the lab has back-filled by increasing technician level support, and by focusing software developments on things that directly improve uptime and user insight into the system's behavior and performance. A more robust suite of test jobs and improved GPU monitoring software are two examples.

Scientific Program Committee: The overall satisfaction rating for the allocation process was roughly the same as in FY11 (83% in FY12 vs. 84% in FY11), and has remained at this level for the last four years, as shown in the following graph.

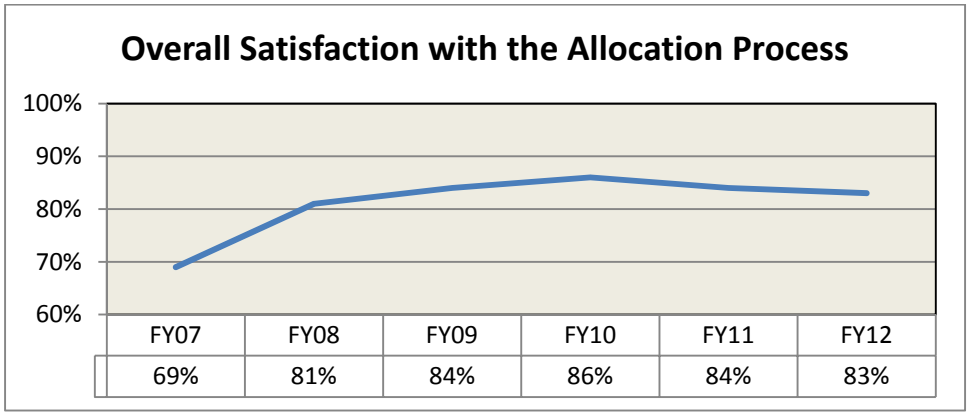


Figure 2. Overall User Satisfaction with the Allocation Process

Satisfaction with the clarity in the call for proposals, and with the transparency of the allocation process, was also reasonably strong. The FY12 rating for the apparent fairness of the allocation process was lower than in FY11, but is consistent with ratings over the past four years and still significantly improved over the early years of the project, as shown in Figure 3.

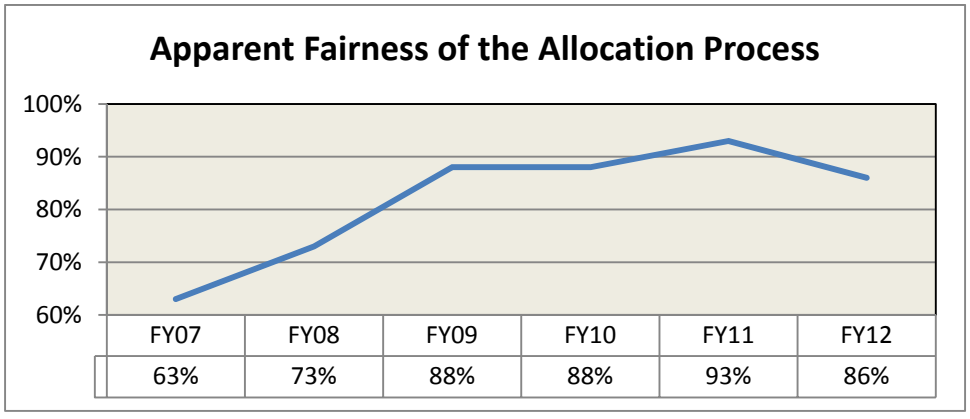


Figure 3. Apparent Fairness with the Allocation Process

Through free-form comments, some individual concerns were voiced regarding the alignment of the allocation process to scientific goals, and to the allocation process itself. These are concerns that have been raised in the past, and are concerns that the Executive Committee and Scientific Program Committee have worked to address, both in terms of the proposal preparation and resource allocation processes, and through communication through avenues such as the annual collaboration "All Hands" meeting.

As we have stated previously, the broad scientific goals of the USQCD collaboration are set forth by the Executive Committee in the most recent SciDAC and LQCD Project proposals. The most important scientific goals are to deliver the lattice calculations most needed by the experimental programs of the Offices of HEP and NP. Each year, the Scientific Program Committee calls for proposals and recommends a program to accomplish these goals. It may also recommend evolution of the goals with the passage of time. Besides alignment with the goals of the collaboration, criteria for judging proposals include intellectual excellence, and scientific output. We are establishing a Scientific Advisory Board to make sure that experimenters have a formal role is the allocations process. This process is supposed to be spelled out each year for the collaboration by the chairs of the Executive and Scientific Program Committees at the All-Hands' Meeting.

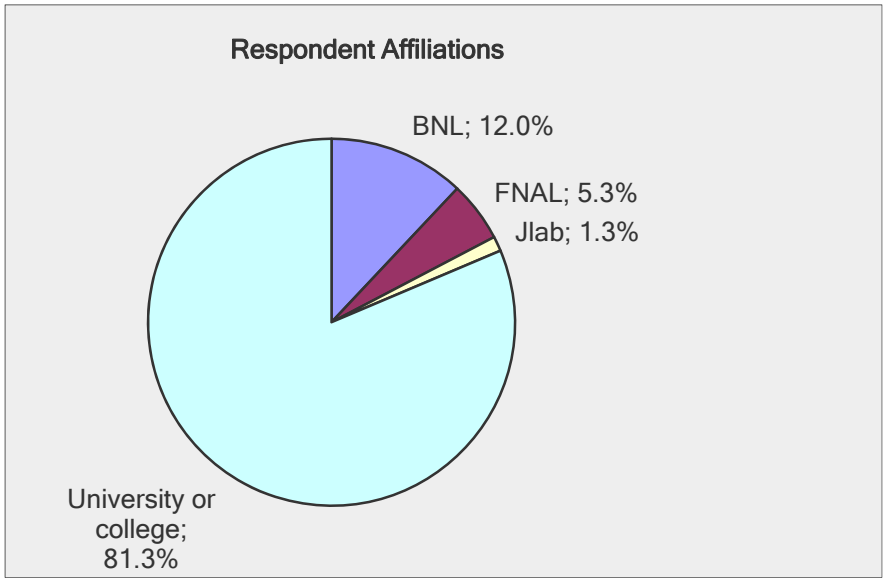
The supercomputing centers used by USQCD sometimes have additional criteria for their use. The Leadership Computing Centers at Argonne and Oak Ridge are designed for the largest computing jobs. Work that can be also accomplished on capacity clusters is strongly discouraged.

The priority between subfields is determined to first approximation by the importance of the experiments served. Innovation also plays a role, as do investigations contributing to the long-term health of the field, such as algorithm research, and formal investigations of quantum field theories.

6. Survey Data

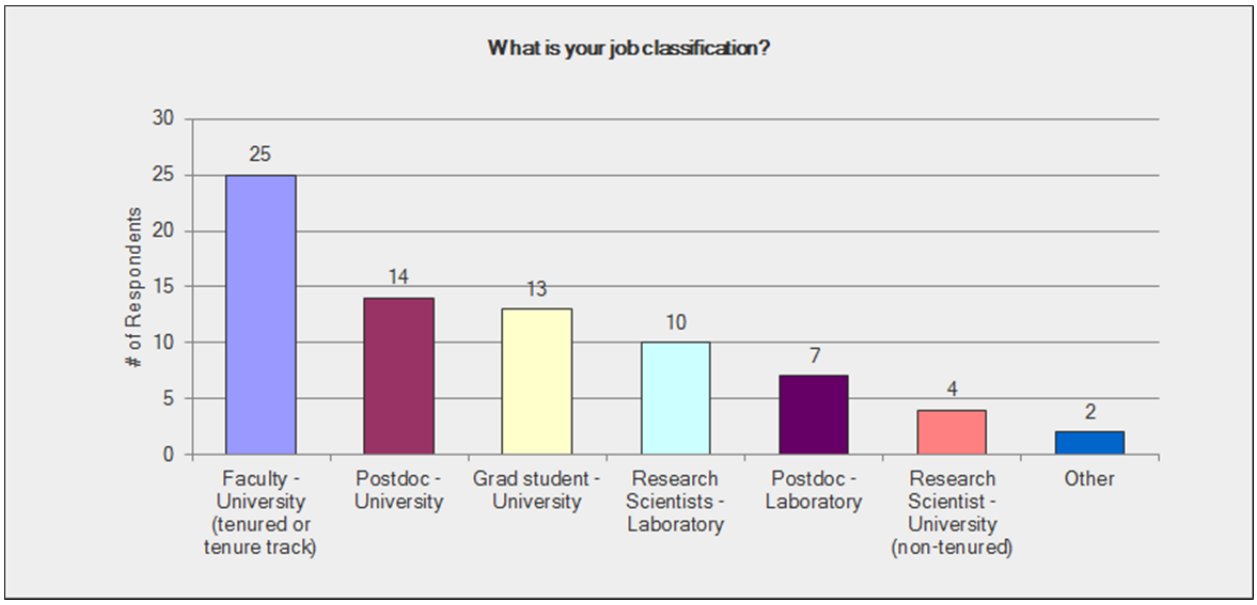
This section contains the data collected through the survey. In some cases, data is presented in tabular form. In other cases, data is shown in graphical form to provide a better picture of response distribution. For those survey questions that also allowed user to enter free-form comments, we have included those comments in this section verbatim. These comments are extremely useful in providing additional insight into areas in which we as a group, or individuals, are performing well. They also provide insight into potential areas for improvement.

6.1. Respondent Affiliations

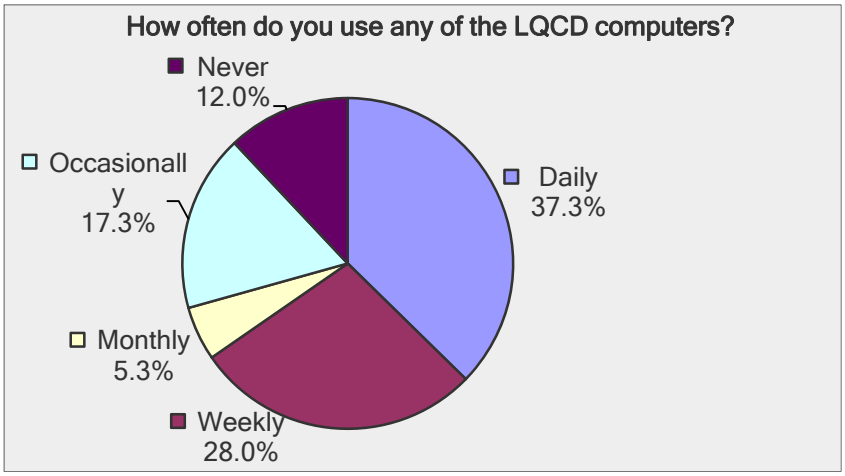


Employed by	Count
BNL	9
FNAL	4
JLab	1
University or college	61
Answered Question	75
Skipped Question	1

6.2. Respondent Job Classifications

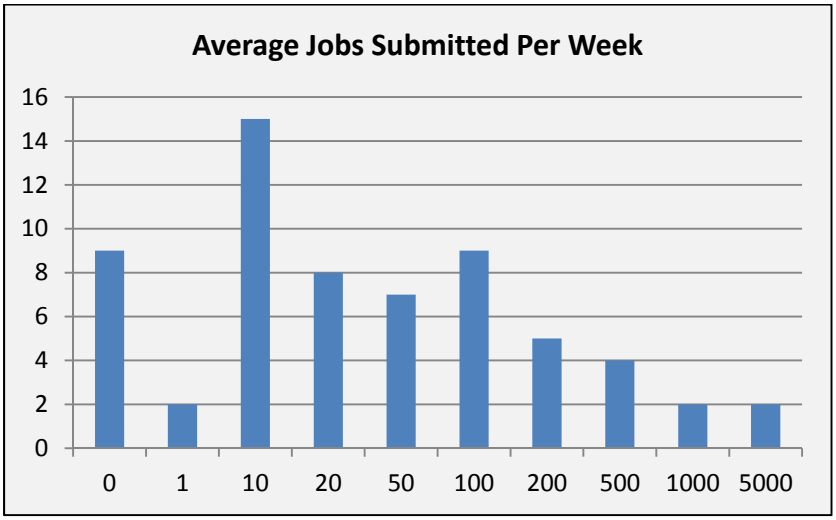


6.3. Frequency of LQCD Computer Usage



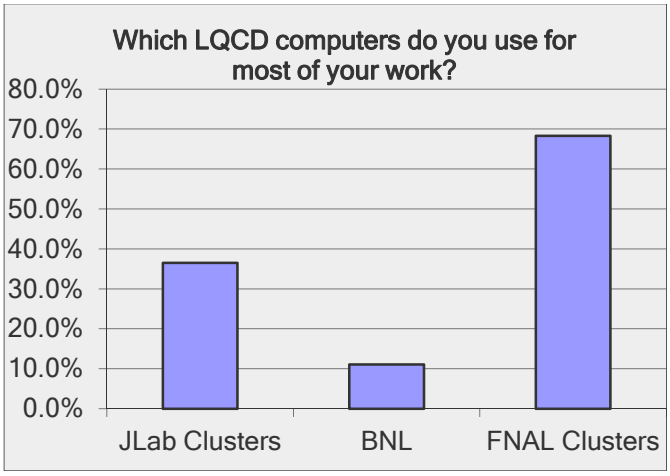
Usage	Freq.
Daily	28
Weekly	21
Monthly	4
Occasionally	13
Never	9
Answered Question	75
Skipped Question	1

6.4. Average Job Submission Rate



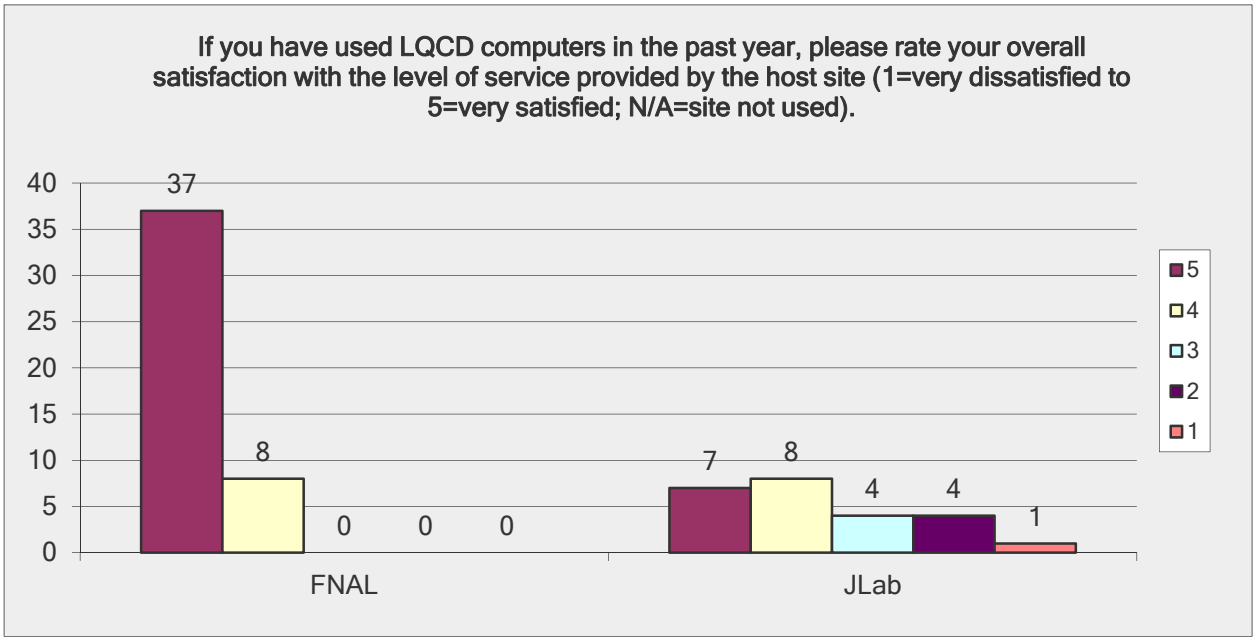
Avg. Jobs (<)	Freq.
0	9
1	2
10	15
20	8
50	7
100	9
200	5
500	4
1000	2
5000	2
Answered Question	63
Skipped Question	13

6.5. Facility Usage



Facility	Users
BNL	7
FNAL	43
JLab	23
Other	0
Answered Question	63
Skipped Question	13

6.6. Overall User Satisfaction

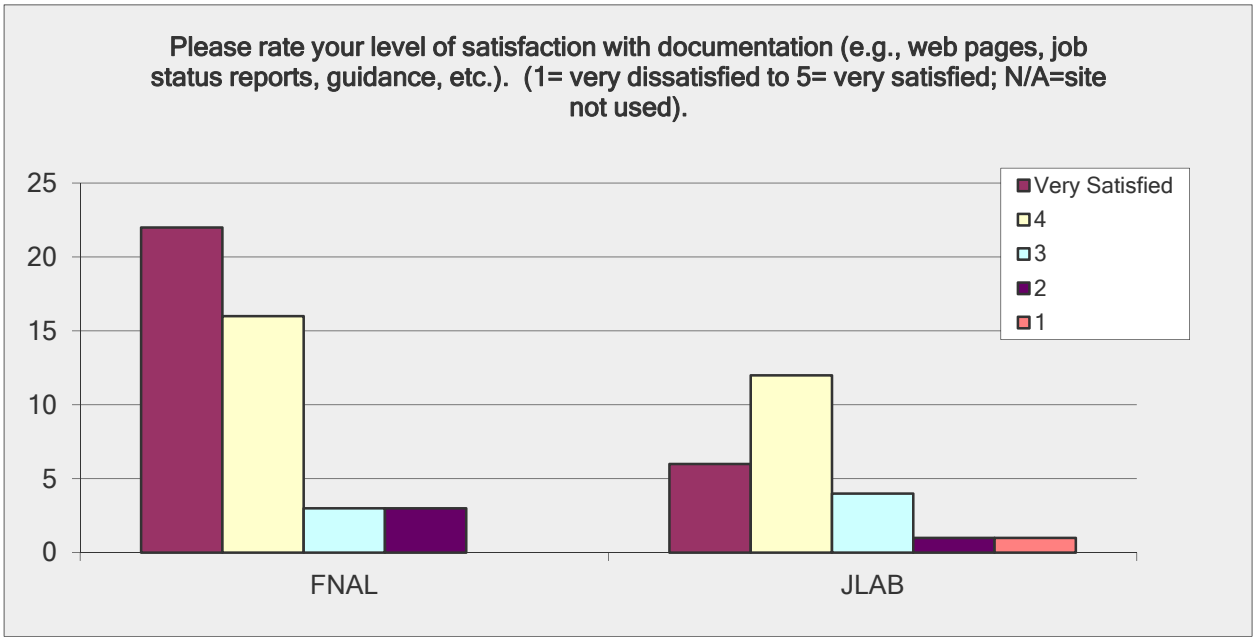


Overall User Satisfaction	Users
Answered Question	64
Skipped Question	12

Comments:

- I have been doing production running on non-USQCD resources this year
- I'm not sure what service refers to (compared to user support)
- I experience a large number of job failures without resolution of problems. I spend too much time "babysitting" my jobs, manually deleting failing jobs that are not properly aborted by queue manager, patching holes of failed jobs, writing scripts to handle failed jobs etc. For large jobs (256 cores) I have frequently experienced ~30% job failure rate. The support crew has tried to figure out the problem for a few years now, but to no avail.
- Running at JLab was quite troublesome and several OS upgrades broke my binary or missed certain previously available modules. Hence just re-running a broken measurement can easily take a day.
- Software-wise service is good, production environment is inadequate
- I guess I'm breaking in a new tape interface at Fermilab, which has been an extended process
- Although jobs not personally submitted to the cluster, students and colleagues do - I use the front-ends for analysis

6.7. Documentation

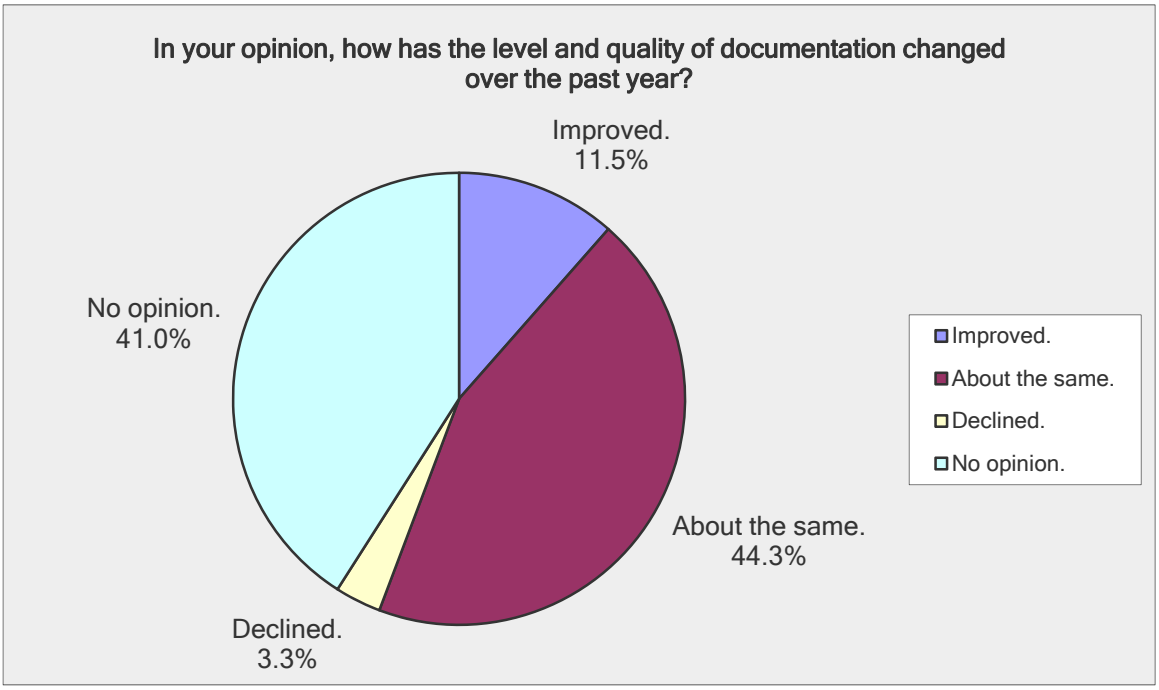


Documentation	Users
Answered Question	64
Skipped Question	12

Comments:

- JLAB has useful web pages showing the status of the clusters but information about installed software is limited/hard to find/outdated.
- Websites are not always up-to-date with information on latest hardware configuration, compilers, queues, etc. I appreciate that it's hard given new machines are added each year.

6.8. Documentation Improvement over Past Year

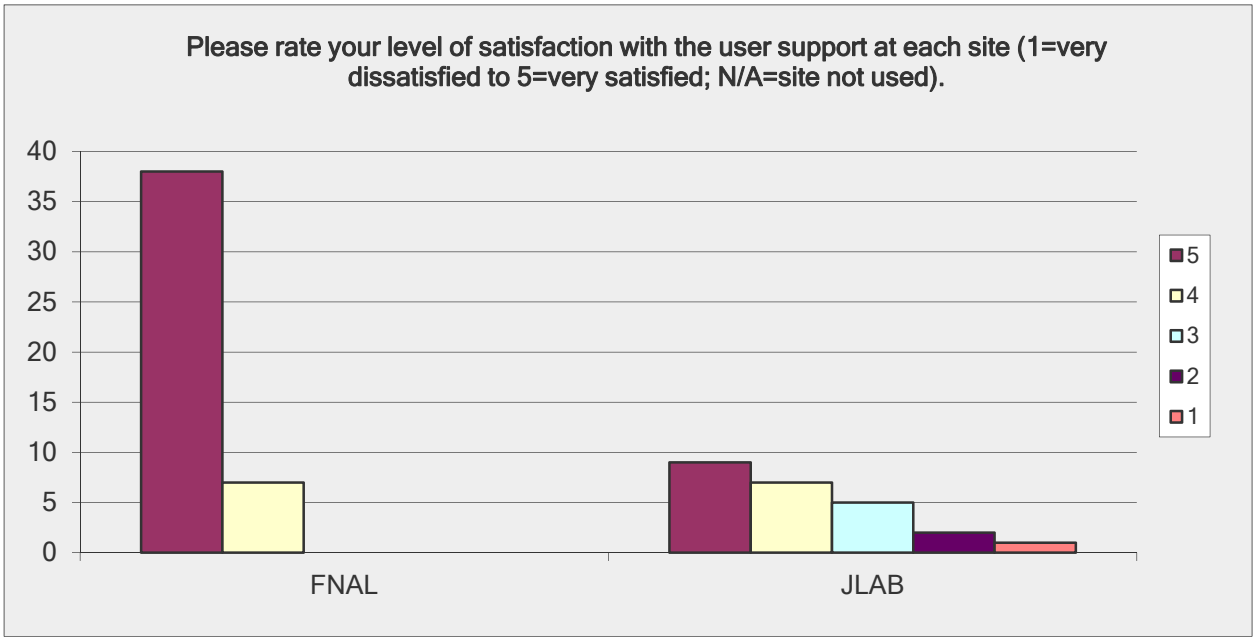


Documentation Improvement	Users
Answered Question	61
Skipped Question	15

Comments:

- I don't know about the past year, but over the years it has improved. At least, I used to send emails to get answers and now I will go to the website for help at times.
- As above, documentation not keeping pace with the introduction of new hardware.

6.9. User Support

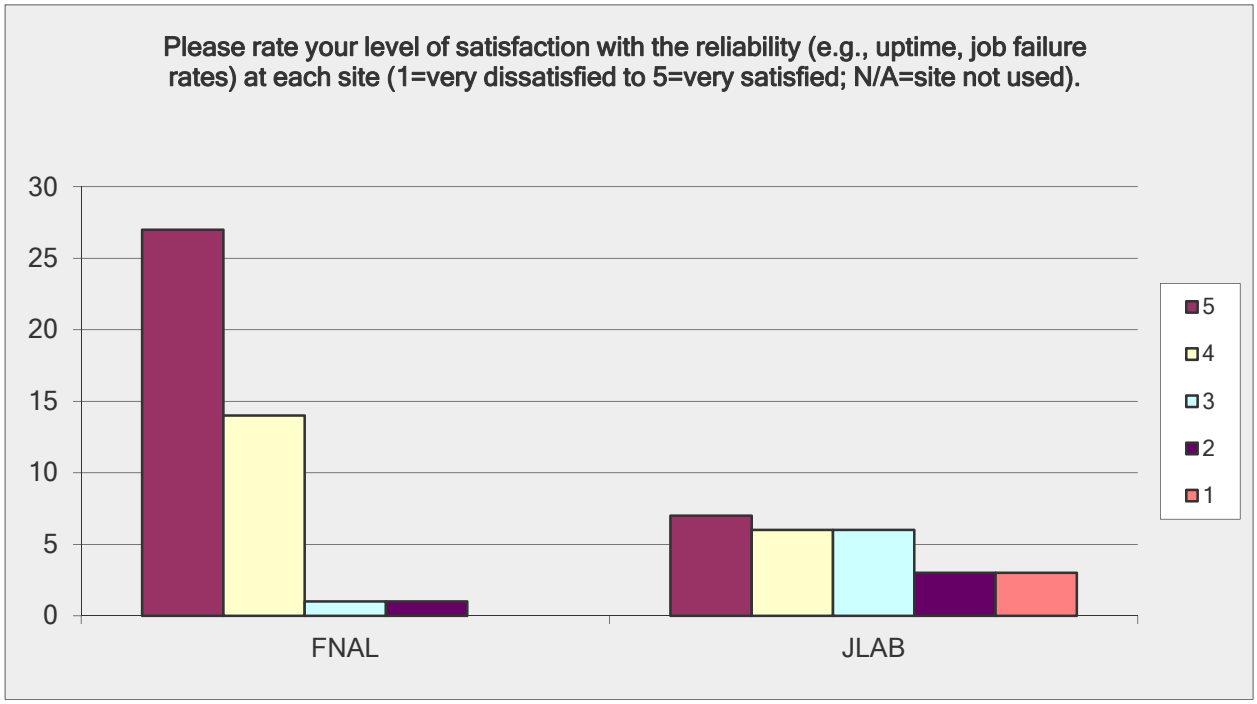


User Support	Users
Answered Question	64
Skipped Question	12

Comments:

- When I do have questions they are addressed promptly
- I particularly received great help from Michael Barnes, Ying Chen and Chip Watson. I really appreciate their help.
- On one issue made an email request twice to admin and never got a response. Otherwise excellent response.
- Issues that prevented running were resolved, either quickly or after some effort by the support staff. Other serious issues remain unresolved.
- Issues are always addressed almost instantly and they are expertly resolved.
- The JLab user support is the worst I have ever seen. I wish JLab was not the part of US LQCD at all. On the other hand, FNAL user support is the best I have ever experienced.

6.10. Reliability

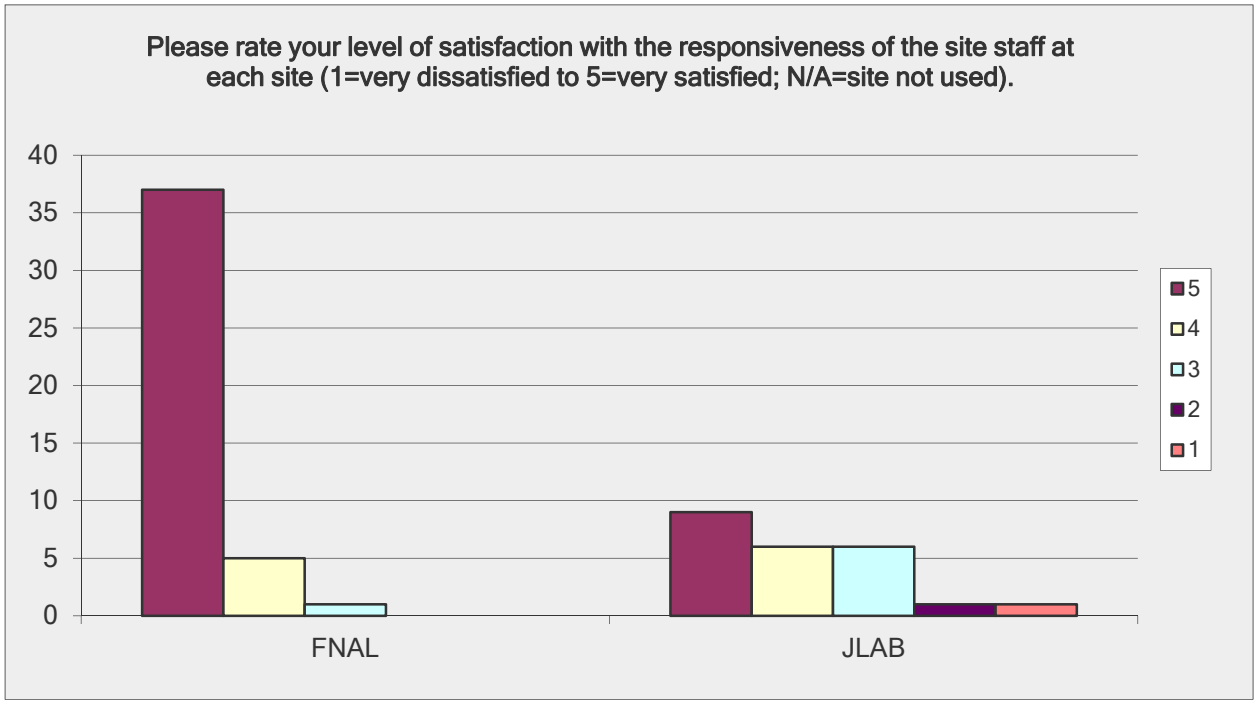


Reliability	Users
Answered Question	64
Skipped Question	12

Comments:

- Before mid 2010, I enjoyed running jobs at JLAB. Now I do not look forward to it because of poor behavior ever since the big upgrade in mid 2010, which has gone unresolved (poor job performance, many failures, failing jobs not being aborted by queue, etc.).
- One failure mode that affects a substantial fraction of jobs persists. This dwarfs other errors that occur at the few percent level.
- Job failure is rather high (at times above 35%), no clear pattern of improvement
- The load reductions necessary over the summer at Fermilab were annoying but mostly harmless
- Downtime during hot weather
- Removal of one interactive node is a problem, other node is overworked, crashes often

6.11. Responsiveness

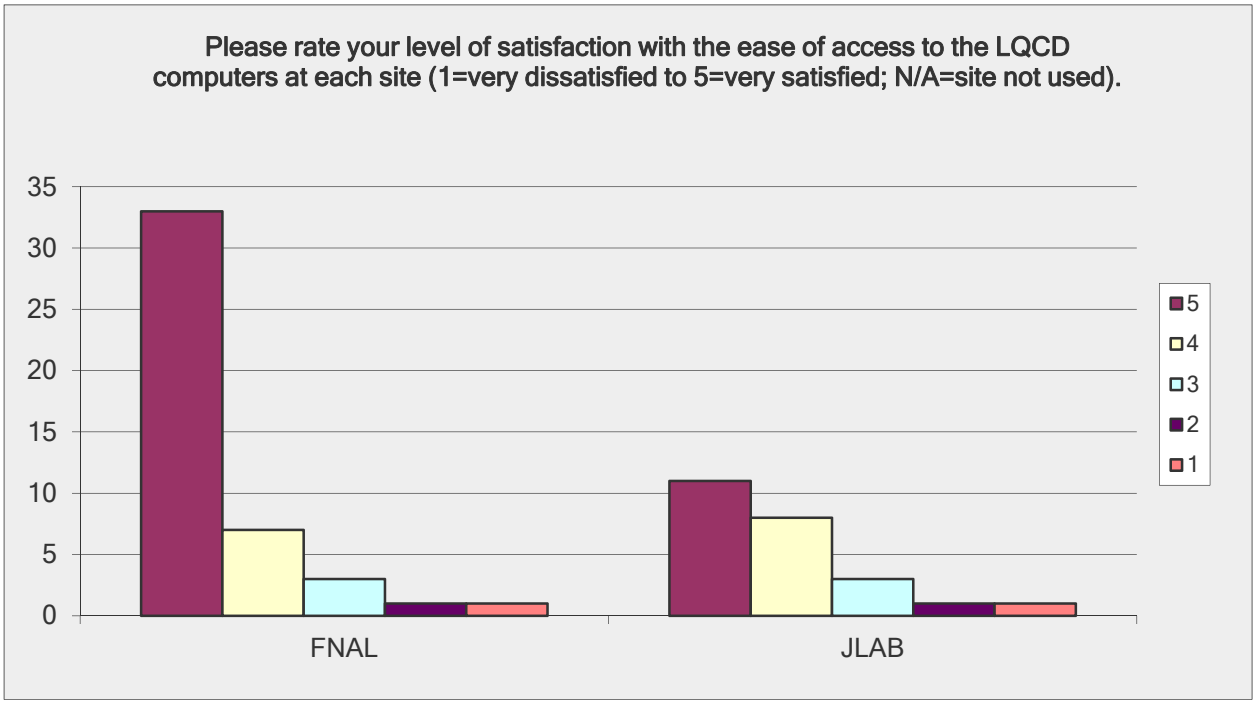


Responsiveness	Users
Answered Question	64
Skipped Question	12

Comments:

- They would have a 5 rating except for whatever reason, my problems have not gone away. I just want to emphasize it is not because they have been ignoring my problems. They just have not been able to resolve them.
- see 9 above
- Responses were generally prompt as appropriate.
- USQCD software needs are met, production issues are not resolved

6.12. Ease of Access

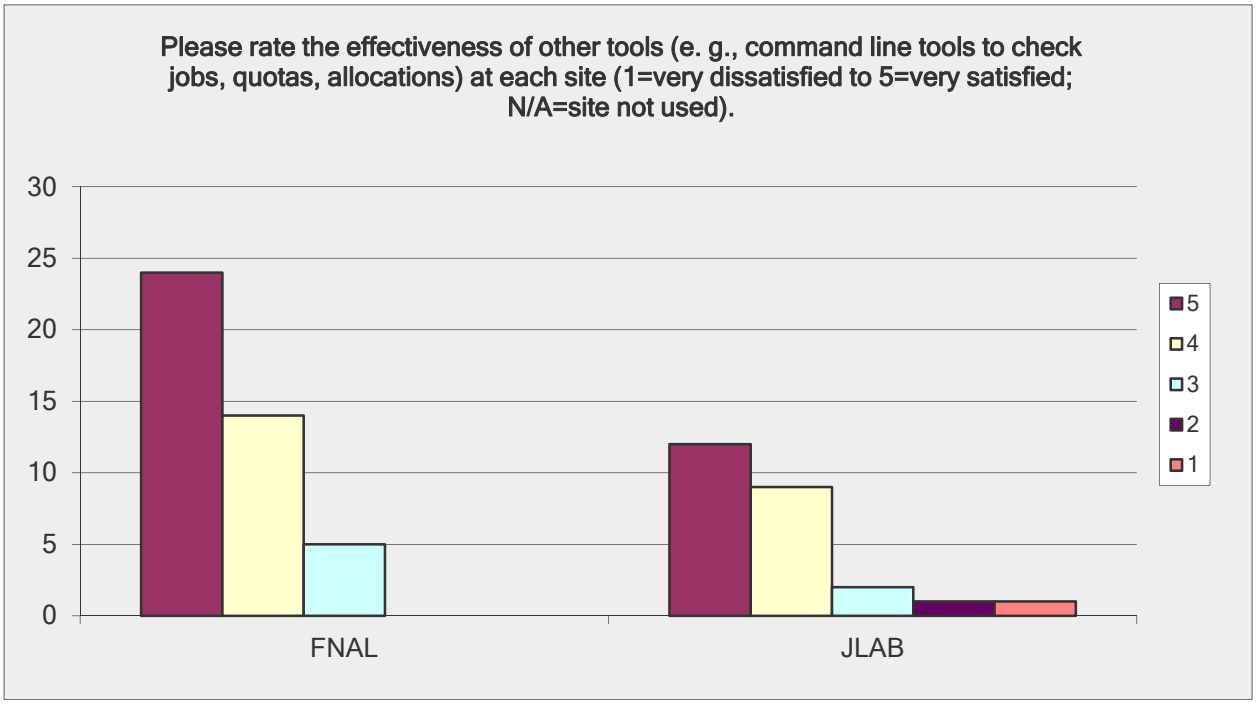


Ease of Access	Users
Answered Question	64
Skipped Question	12

Comments:

- JLAB seems to have an archaic login process which makes file transfers in and out unnecessarily complicated. It is easier for me to login to Lawrence Livermore computers! Given the reality that we users have multiple accounts on various machines makes file transfers a crucial part of work. Other facilities use cryptocards or some other means which allow easy access. The double login is a REAL PAIN.
- It's hard to move big files in and out JLab server.
- Although Kerberos is a huge pain, once it's done, access is fine.
- Kerberos is annoying
- I've found some more servers with Kerberized ssh that I can go through to access Fermilab, so I haven't tried again to set that up on my laptop
- The firewall at JLab is a bit onerous.

6.13. Effectiveness of Other Tools

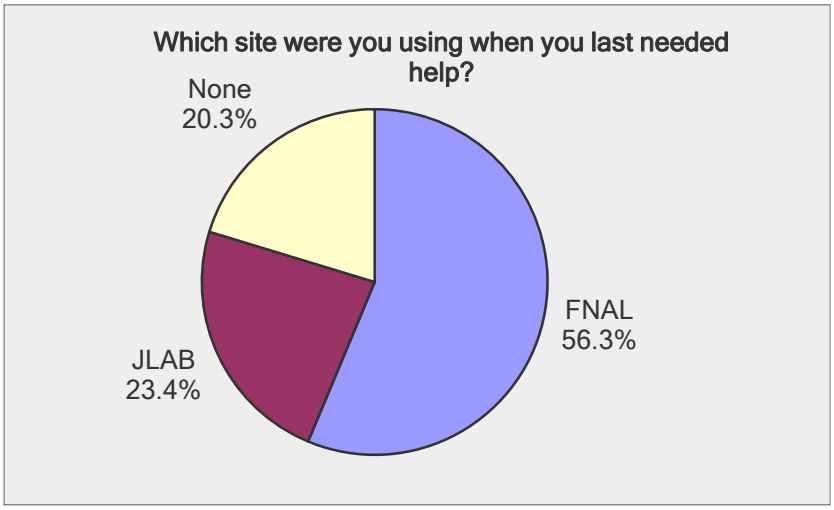


Other Tools	Users
Answered Question	64
Skipped Question	12

Comments:

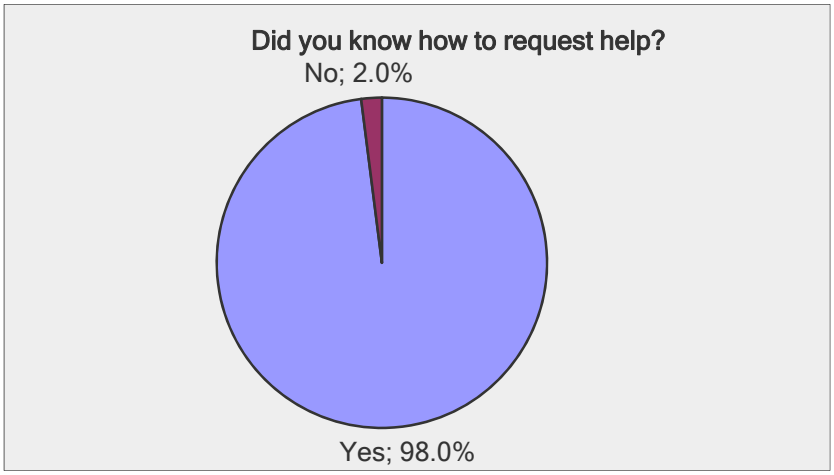
- It would be nice to be able to view post script over ssh
- The quota placed on home directory at FNAL is small (sometimes just compiling software requires gigabytes of disk space).
- Home directory quota at 2GB is rather small.

6.14. Site Used when Help Last Needed



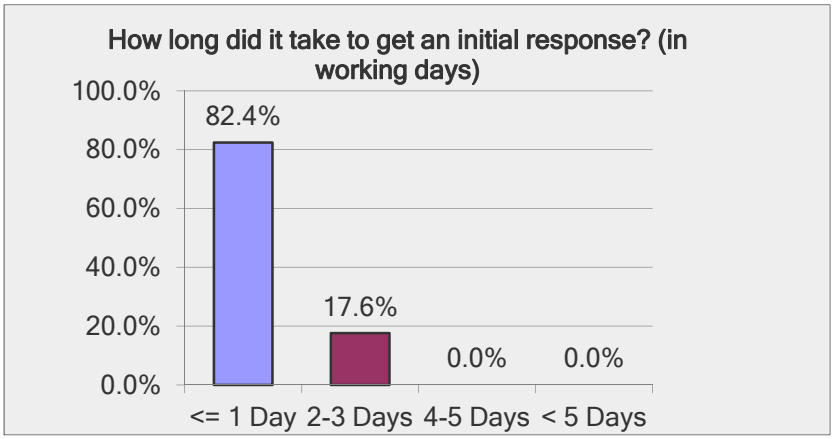
Help asked	Count
BNL	0
FNAL	36
JLab	15
None	13
Answered Question	64
Skipped Question	12

6.15. Requesting Help



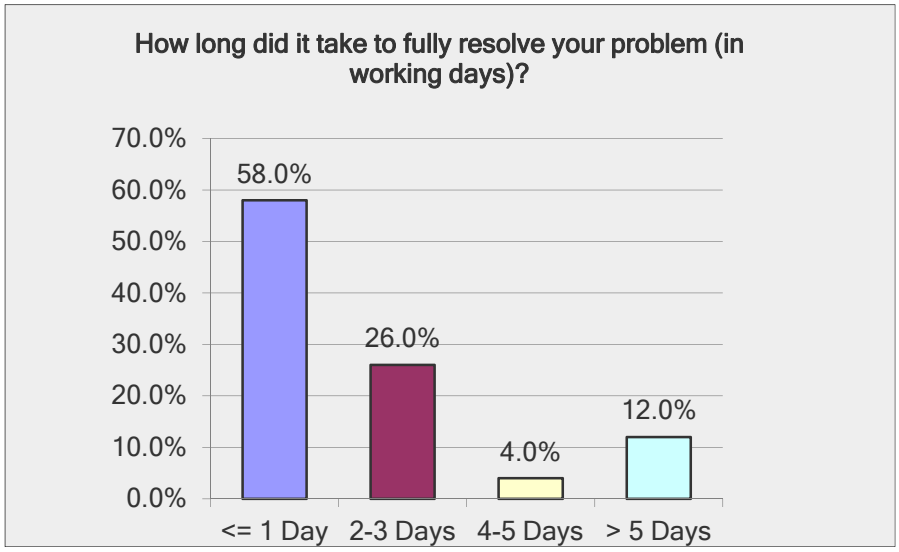
Knows	Count
Yes	49
No	1
Answered Question	50
Skipped Question	26

6.16. Initial Response Time



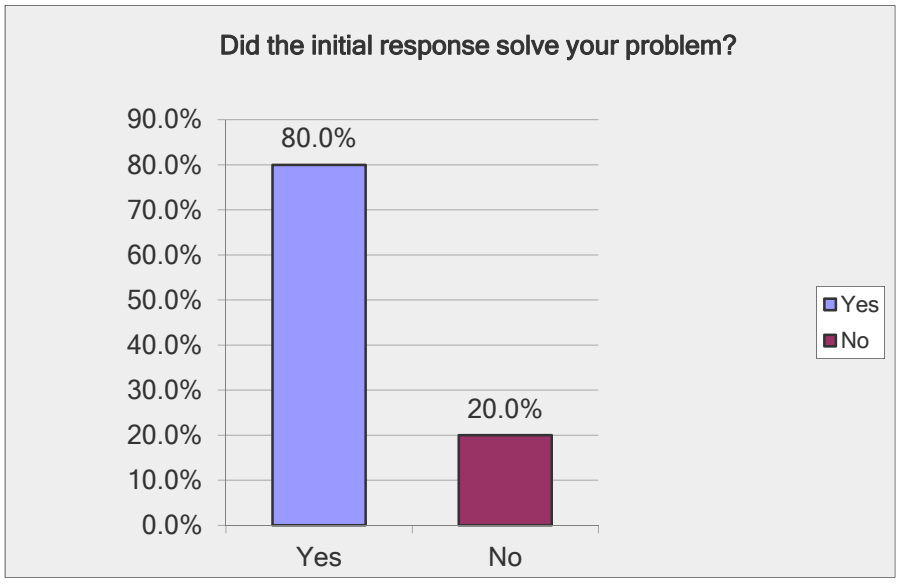
Days	Freq.
<= 1 day	42
2-3 days	9
4-5 days	0
>5 days	0
Answered Question	51
Skipped Question	25

6.17. Time Needed to Resolve a Ticket



Days	Freq.
<= 1 day	29
2-3 days	13
4-5 days	2
>5 days	6
Answered Question	50
Skipped Question	26

6.18. Closing Tickets at Initial Response



Closed?	Count
Yes	40
No	10
Answered Question	50
Skipped Question	26

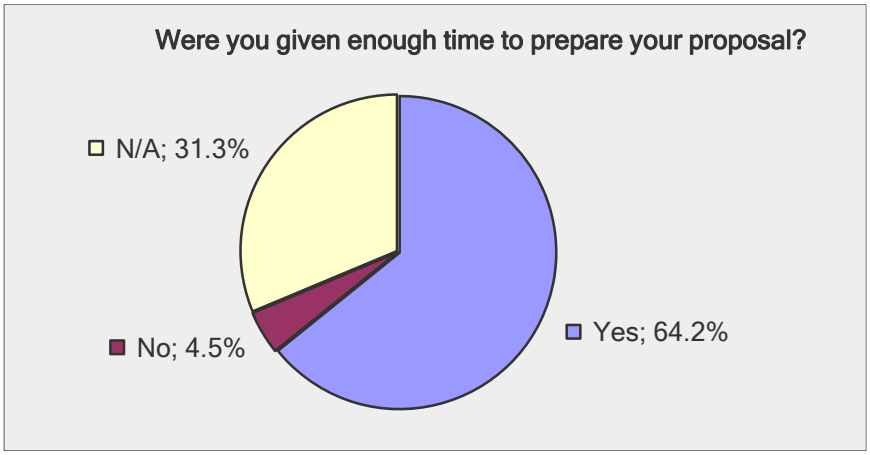
6.19. Feedback on Helpdesk

Helpdesk feedback	Users
Answered Question	9
Skipped Question	67

Comments:

- Great!
- Latest issue is waiting for me to try suggested solution, so I can't say if issue is resolved. Has to do with Globus Online and authentication.
- The documentation could be improved regarding MPI at JLab. The versions have been changing lately.
- Everyone at FNAL has always been very helpful, and the help is timely - even on the weekends and after hours.
- I have very good experiences with the helpdesk. Thank you.
- For 90% of my issues, problems are resolved within hours. In particular, Michael Barnes has been a great help to me. For my job failure problems, they have been unresolved since mid 2010.
- As in the past year I'm very happy to run on Fermilab clusters knowing that whatever problem I may encounter Don, Amitoj, et al. will respond quickly to emails and work hard to find a solution. Thank you!
- Though this page refers to receiving help via a helpdesk, I have rarely (if at all) used a helpdesk. I email LQCD-Admin and receive amazing user support. If I'm supposed to be using a helpdesk I haven't been made aware of that.
- Questions 17 and 18 do not offer appropriate options: some problems are resolved in a day, some remain unresolved. Sometimes the initial response resolves the problem, sometime it does not.

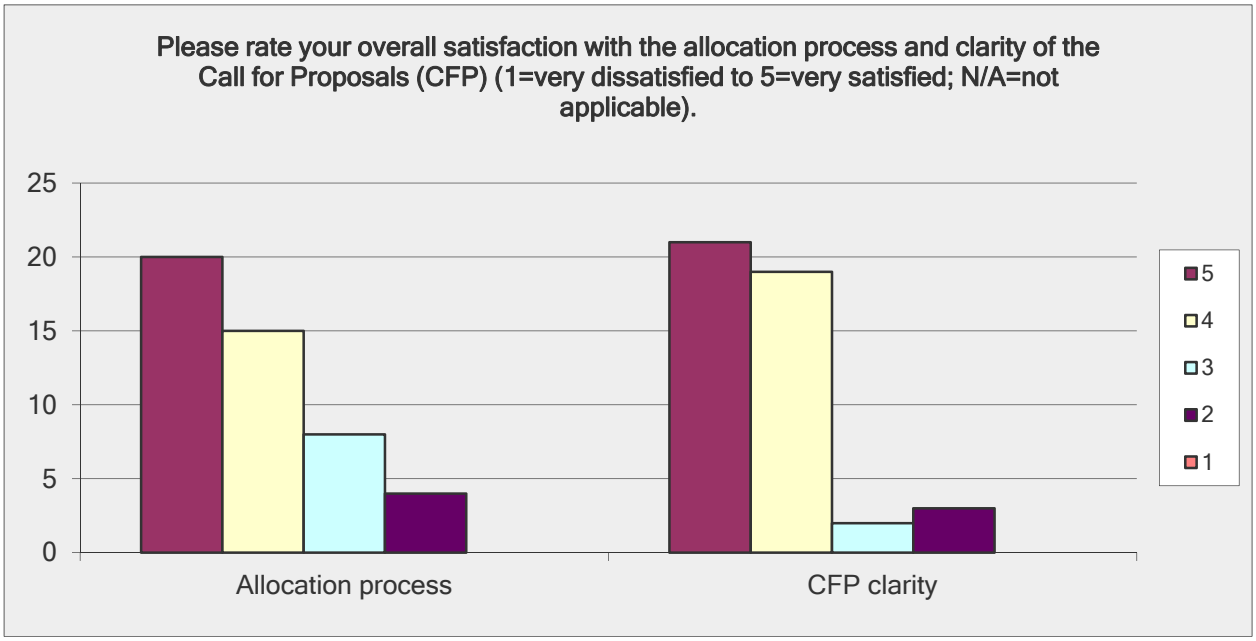
6.20. Sufficient Time to Prepare Proposal



Time to prepare CFP	Users
Yes	43
No	3
N/A	21
Answered Question	67
Skipped Question	9

Comments: (*none*)

6.21. Overall Satisfaction with the Allocation Process and Clarity of CFP

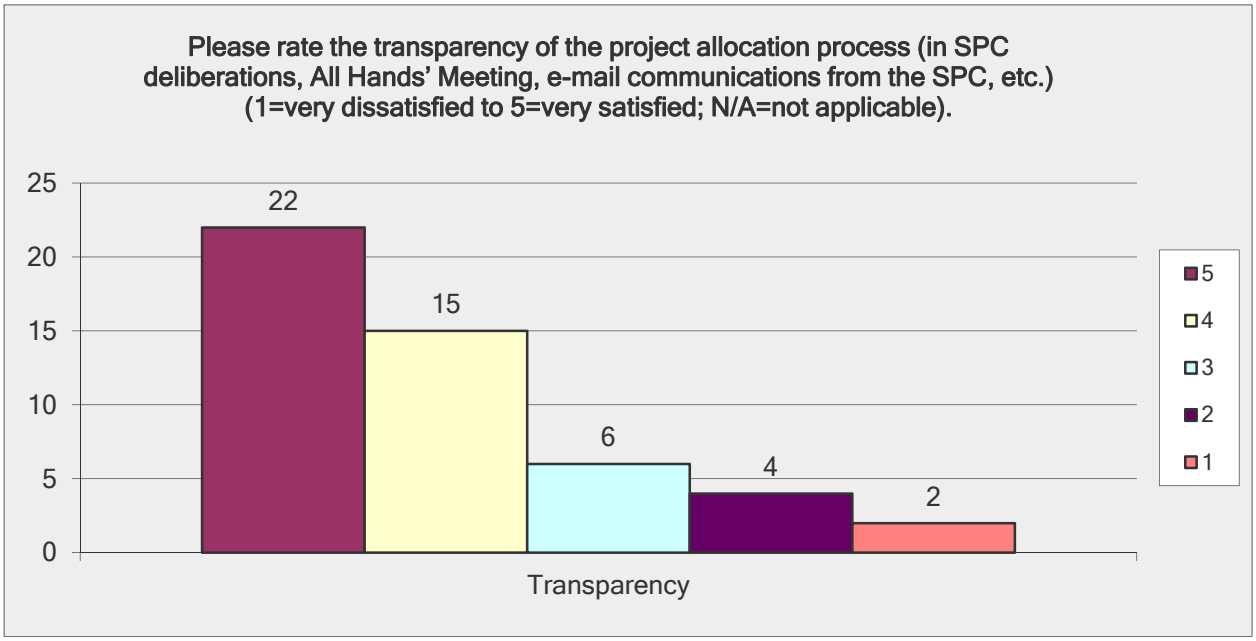


Allocation, CFP Clarity	Users
Answered Question	67
Skipped Question	9

Comments:

- Should be more science goal based
- While providing a good excuse to see colleagues, the need to physically go and defend our proposals is not obvious to me. We have to spend significantly more money and time for these allocations than other computing resources, yet the awards are not suitably larger (and the other machines don't have the job failure problem).
- Last CFP had changed the amount of available resources in the middle of the process which was unhelpful for the process.
- Insufficient advanced notice and ground rules were given for application for INCITE resources
- The SPC made some frankly bizarre recommendations that undermined my confidence in the allocation process (though perhaps I should only have had less confidence in years past)
- Allocation process: Skeptical of concept of "allocations" itself, not the implementation of the process.

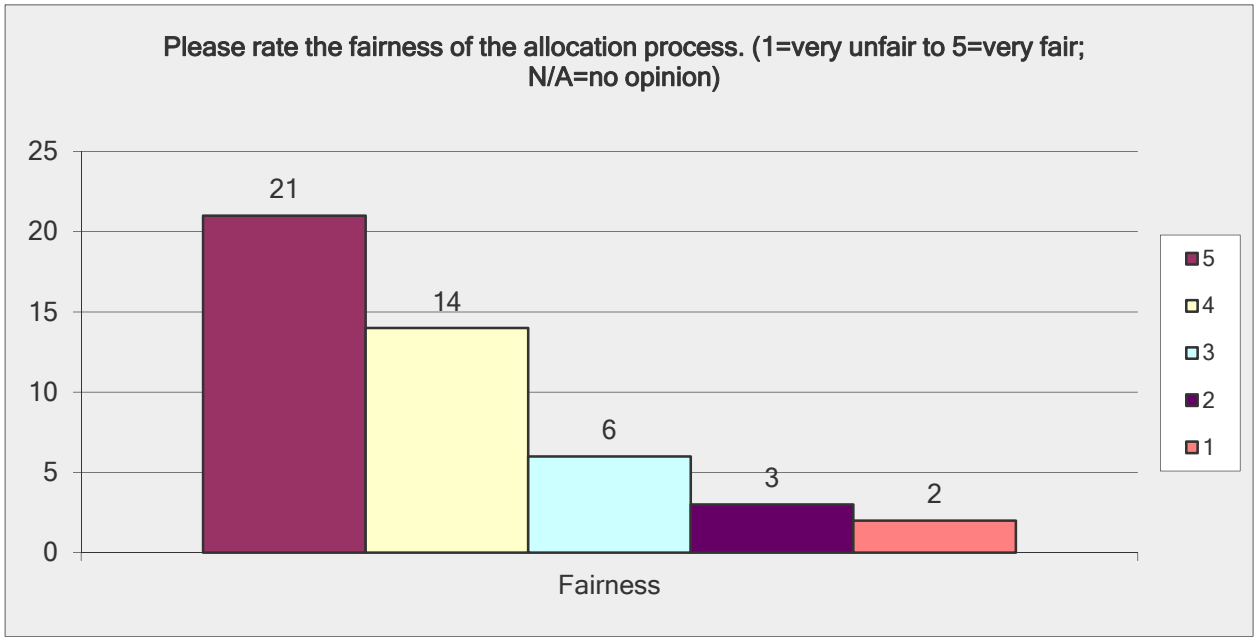
6.22. Transparency of the Allocation Process



Comments:

- It is entirely unclear what effect our presentations have on the award decision.
- The changes in SPC during the last allocation are great! However, most of the allocation process is still black box to us. It might be helpful to factor in when one gets reduced allocation time, is it b/c of the proposal or physics goal, or it's mainly due to the overall scale to fit all the projects into available resources.
- The All Hands' Meeting is a waste of time.

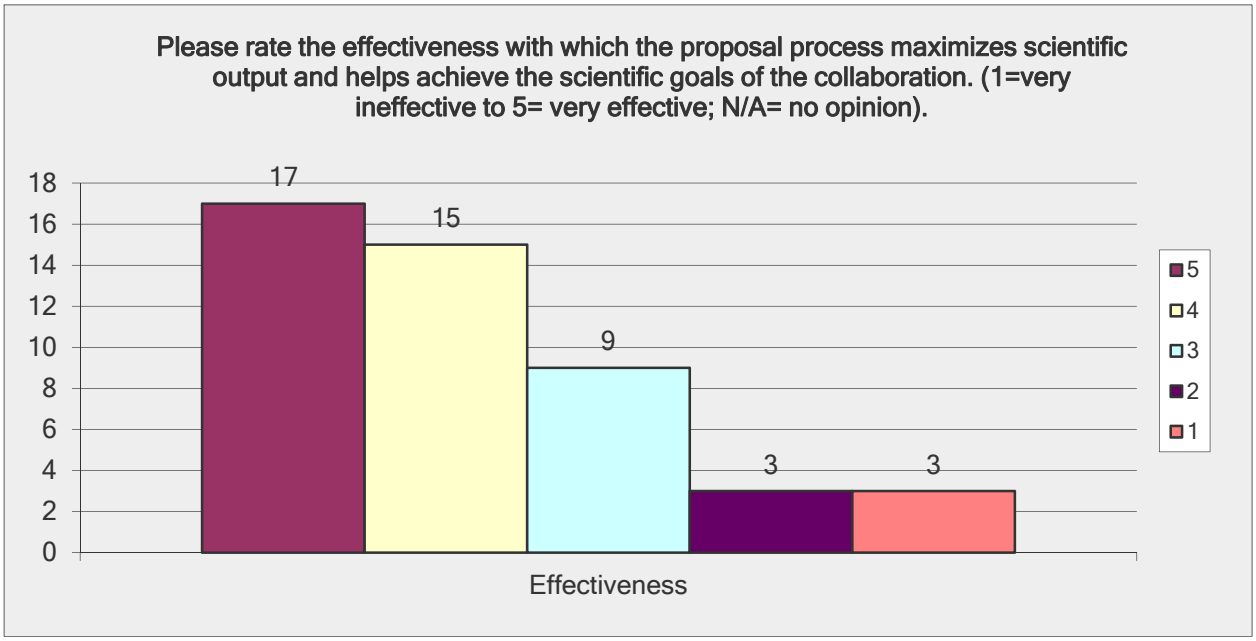
6.23. Fairness of the Allocation Process



Comments:

- Groups generally seem to get roughly proportionate amounts of cpu time (I am not discussing early use incite time). However, it seems basically like the award allocations are effectively pre-determined by history (groups with large allocations previously continue to get large allocations and things seem quite steady state). Not sure if this is good or bad, just an observation. Small "startups" seem to do reasonably well getting time/support.
- It seems that there is skewness of judgment of allocation process.
- Not asking any question or for a presentation at the all hands meeting, but then cutting a small allocation request by 20% is contradictory.

6.24. Effectiveness of the Allocation Process in Maximizing Scientific Output



Comments:

- The amount of effort per cpu cycle through USQCD is much higher than other means of applying for cpu time (eg. NERSC, XSEDE). Further, the other machines seem more professionally maintained with more support staff and routine maintenance schedules (as often as weekly at ANL and quite regular at NERSC and XSEDE machines). Lately, I have been questioning more seriously whether to apply for time through USQCD, given the difficulties I have had.
- Allocation time is not effectiveness for our achievement.
- The proposal process runs on one year cycle. This is adequate for long running programs but hurts exploratory projects.
- If the proposal process is supposed to maximize scientific output to achieve the scientific goals of the collaboration, I have never seen any metric used by the SPC to perform such an optimization. Furthermore, instead of wasting everyone's time hearing about all the proposals that were submitted to the SPC at the All Hands' Meeting, how about a higher level discussion about what should be the scientific goals of the collaboration and how best to maximize the scientific output to achieve them.

6.25. General Comments

General Comments	Users
Answered Question	16
Skipped Question	60

- Review of Class B proposals by the SPC on a quarterly basis would be very helpful for conducting modest projects. Class C is too small for this and a year wait for Class B time is too long.
- Keep up the good work!
- More Documentation!
- a very good support team at FNAL
- Among many experiences with other facilities and CPU time allocation organizations, USQCD is the most reasonable and the most effective. This is the case for the facility management, the allocation process, and the long term decision making processes. I really hope USQCD will keep up with the current success records and will acuire more CPU in the future.
- "I think having regularly scheduled hardware maintenance is a must for the JLAB machine. I also would highly favor the purchase of higher quality hardware. I would happily trade less cpu cycles for a more reliable machine. I waste too much time dealing with job failures."
- The judgment of allocation time is not completely fair. I am not satisfied with process of arrangement of allocation time how scientific community judge from achievement of scientific goal and impact. There is large skewness of allocation in each collaboration. I do not understand why community arrange that from their proposals. It seems that community "fairly" and "naively" arranges the time from request of proposal, even if this is over estimate or unrealistic one. From this point of view I am concerned to tend to inflate the request time from the next year.
- Given several periods of idle clusters, I'm wondering if this year's allocation assigned too large amounts of computing time to single projects at Jlab or Fermilab which then didn't start running from day 1 of the new allocation. Is there a feedback on how projects use their allocation to the following year?
- "There should be a max allocation time. We all know the big players in the community are, and with limited resources it's unlikely any proposal can get 1/4 of the total time anyway. It helps for people to come out with a proposal that are closer to what they might actually get. This probably also help SPC allocate machine time. Can the SPC give points to the final allocation process and make it available to all USQCD members? on the factors that affect the final scaling of the original proposal. It would like be color coded as FLAG. For example, green, orange, red can be given to the relevance of the USQCD near-future goal/direction, reasonableness on the amount requested time, what SPC thinks whether proposed physics goal is achievable with given resources, human resource to complete the project, publications, controllable systematics and any category that affects the final numbers."

- Don Holmgren is doing a great job, and is very helpful.
- At times, it can take days for a job to get through the queue at JLAB, which can make it difficult to do testing.
- Since I began using the FNAL clusters about 4 yrs ago, I've been very satisfied with the support offered by Don Holmgren, Amitoj Singh, and the rest of the support staff. No complaints there. The only complaint I have is a broader one regarding storage capabilities. I believe this to be a known issue. Nevertheless, I feel obligated to point out that it is the bottleneck in my current project. The processes of obtaining an allocation, accessing clusters for production running and data analysis, and receiving help when required from support staff have all been more efficient than the process of moving large numbers of pre-existing propagators from one location to another (off-site and/or FNAL tape to FNAL clusters) in preparation for production running. As I write this I'm getting one-on-one help from FNAL's excellent support staff to refine the process and make it as efficient as possible. Identifying and informing users of best practices could help, but I think storage capability remains an issue to be addressed.
- We are slowed down more by limitations in disk space than by lack of computer rime.
- High job failure rates on Jlab clusters result in low productivity and a great deal of wasted time by physicists. This is particularly serious for young physicists for whom productivity is essential for their careers. The failure rate also contributes directly to low utilization. The staff are clearly trying hard to solve the problems, but staffing may too lean. Perhaps there is a way to standardize hardware and software between Fermilab and Jlab, so that more staff can focus on solving the failure rate problem(s). Otherwise, it may be necessary to invest more in staff and less in hardware.
- LQCD computing facilities are run very efficiently and do a good job of providing cycles as determined by the SPC. The process of allocating those cycles is completely opaque and it is difficult to determine what metric the SPC uses to maximize the scientific output to meet the collaborations stated scientific objectives. Furthermore, there is no open process in place to update the scientific objectives of the collaboration in response to the changing experimental program. The All Hands' Meeting is a complete waste of time. It is only held one a year and essentially all of the time is spent rehashing information that is already available in the written proposals submitted to the SPC. I'd like to see more frequent collaboration meetings (semi-annually?) with strategic discussions about what are the current goals of the collaboration, how effectively are we meeting those goals, do the goals need to be revised based on the experimental situation, a review of the budgets of the LQCD project and the SCIDAC grant and a discussion about whether those funds are being allocated to maximize the scientific output of the collaboration.
- “I really wish JLab clusters were not a part of LQCD computing facilities at all. It has *very* bad user support and the clusters are meant for only JLab researchers. The nodes are never free and the qstat shows that the users with active jobs are always the ones from JLab itself! On the other hand, FNAL has a excellent user support. I send a request and I know that its going to be done in few minutes! The staff there is highly motivated and very professional. My complements to them!"

7. Survey Questionnaire

This section contains the contents of the FY12 survey that was presented to the user community.

2012 LQCD Computing Facility User Survey

Introduction

The purpose of the LQCD Computing Project is to acquire and operate dedicated computing hardware for the study of quantum chromodynamics (QCD). To this end, the project operates the LQCD Computing Facility, which is a distributed facility with dedicated compute hardware located at BNL, FNAL, and JLab.

The purpose of this survey is to gather information that will help the project team assess how well the LQCD facilities and services are meeting the needs of the USQCD user community, and to identify areas for improvement.

When completing the survey, we would like you to consider your user experience over the last 12 months (Oct 1, 2011 through Sep 30, 2012). This year's survey is focused on the FNAL and JLab facilities. Since QCDOC was decommissioned in August 2011, there are no survey questions related to QCDOC.

Our objective is to understand, from your perspective, what we're doing well and what we could be doing better, so your honest opinion really counts.

We know your time is valuable, so thank you very much for taking the time to share your insight.

Demographic Information

1. Who is your employer?
   - BNL
   - FNAL
   - Jlab
   - University or college

2. What is your job classification?
   - Grad student University
   - Postdoc University
   - Postdoc Laboratory
   - Faculty University (tenured or tenure track)
   - Research Scientist University (nontenured)
   - Research Scientists Laboratory
   - Other
   - Other Job Classification [*text entry box*]

3. How often do you use any of the LQCD computers?

- Daily
- Weekly
- Monthly
- Occasionally
- Never

4. During periods when you are using the LQCD facilities, please enter the approximate number of jobs you submit on average in a given week. [*text entry box*]

5. Which LQCD computers do you use for most of your work?

- JLab Clusters
- BNL
- FNAL Clusters
- Other [*text entry box*]

User Satisfaction

In this section, we ask you questions about your satisfaction levels in different categories.

6. If you have used LQCD computers in the past year, please rate your overall satisfaction with the level of service provided by the host site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

7. Please rate your level of satisfaction with documentation (e.g., web pages, job status reports, guidance, etc.). (1= very dissatisfied to 5= very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

8. In your opinion, how has the level and quality of documentation changed over the past year?

- Improved.
- About the same.
- Declined.
- No opinion.

9. Please rate your level of satisfaction with the user support at each site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

10. Please rate your level of satisfaction with the reliability (e.g., uptime, job failure rates) at each site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

11. Please rate your level of satisfaction with the responsiveness of the site staff at each site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

12. Please rate your level of satisfaction with the ease of access to the LQCD computers at each site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

13. Please rate the effectiveness of other tools (e. g., command line tools to check jobs, quotas, allocations) at each site (1=very dissatisfied to 5=very satisfied; N/A=site not used).

	1	2	3	4	5	N/A
FNAL	o	o	o	o	o	o
Jlab	o	o	o	o	o	o

Comments [*text entry box*]

Helpdesk Evaluation

Based on your last help desk request, please answer the following questions.

14. Which site were you using when you last needed help?
    - FNAL
    - JLAB
    - None

15. Did you know how to request help?
    - Yes
    - No
    - Additional Input [*text entry box*]

16. How long did it take to get an initial response? (in working days)
    - <= 1 Day
    - 2 – 3 Days
    - 4 – 5 Days
    - > 5 Days

17. How long did it take to fully resolve your problem (in working days)?
    - <= 1 Day
    - 2 – 3 Days
    - 4 – 5 Days
    - > 5 Days

18. Did the initial response solve your problem?
    - Yes
    - No

19. Regarding helpdesk services, do you have any comments or suggestions for improvement? If so please specify. [*text entry box*]

Call for Proposals (CFP) and Project Allocations Process Evaluation

This section contains questions related to the project resource allocation process.

20. Were you given enough time to prepare your proposal?
    - Yes
    - No
    - N/A

    Comments [*text entry box*]

21. Please rate your overall satisfaction with the allocation process and clarity of the Call for Proposals (CFP) (1=very dissatisfied to 5=very satisfied; N/A=not applicable).

	1	2	3	4	5	N/A
Allocation process	o	o	o	o	o	o
CFP clarity	o	o	o	o	o	o

Comments [*text entry box*]

22. Please rate the transparency of the project allocation process (in SPC deliberations, All Hands' Meeting, email communications from the SPC, etc.) (1=very dissatisfied to 5=very satisfied; N/A=not applicable).

	1	2	3	4	5	N/A
Transparency	o	o	o	o	o	o

Comments [*text entry box*]

23. Please rate the fairness of the allocation process. (1=very unfair to 5=very fair; N/A=no opinion)

	1	2	3	4	5	N/A
Fairness	o	o	o	o	o	o

Comments [*text entry box*]

24. Please rate the effectiveness with which the proposal process maximizes scientific output and helps achieve the scientific goals of the collaboration. (1=very ineffective to 5= very effective; N/A= no opinion).

	1	2	3	4	5	N/A
Effectiveness	o	o	o	o	o	o

Comments [*text entry box*]

General Comments

25. Please share with us any additional comments or suggestions regarding the operation and use of the LQCD computing facilities. [*text entry box*]

Thank you

Thank you very much for completing the survey. If you have questions or suggestions, please contact Bill Boroski, the LQCD Project Manager, at boroski@fnal.gov.