TeraGrid '06 Tutorial Evaluation

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A Report on the Survey
26 March 2007

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Executive Summary

TeraGrid '06, the first annual TeraGrid conference, was held in Indianapolis on June 13-15, 2006. Eight pre-conference tutorials, covering a diverse range of topics, were offered on June 12, 2006. Half of the tutorials were a full day in length and half were 4 hours long. Researchers at the University of Michigan's School of Information developed a 15-question survey to measure attendees' satisfaction with the tutorials. Results from the survey are presented in this report and are intended to assist TeraGrid personnel with the development of future educational events such as tutorials and workshops and to provide feedback to tutorial instructors.

The results from an analysis of the survey data show that the tutorial attendees who responded to the survey generally rated their experiences very positively and would attend another educational, outreach, or training event sponsored by TeraGrid. Respondents felt they gained a deeper understanding of the topic at hand and planned to use at least some of what they learned in their work or teaching. The results also show that some tutorials were more successful than others in terms of the presentation of material. Some respondents were dissatisfied with the handouts available to them while others desired more opportunities for hands-on activities. Responses to open-ended questions suggest that some attention should be paid to the level of the tutorial and the ability of the attendees. Offering introductory tutorials in which attendees are given practical step-by-step training in tandem with more advanced tutorials geared at experienced users could be beneficial in meeting the needs of a wide variety of users.

Introduction

The Tutorial Evaluation Survey was developed in order to assess eight tutorials held in Indianapolis on June 12, 2006, just prior to the start of the first annual TeraGrid Conference.[1] The 15-question survey was developed by researchers at the University of Michigan's School of Information, who are conducting an evaluation study of the TeraGrid. Appendix A contains a copy of the survey instrument. TeraGrid's Director of Education, Outreach, and Training provided comments on the survey draft and communicated with the tutorial instructors regarding the survey. The survey was handed out to instructors on the day of the tutorial; they were asked to leave time at the end of their course to enable attendees to complete the survey and to collect the responses and return them to the conference registration desk. A total of 116 surveys were returned. We were unable to calculate response rate because we did not receive data on the total number of tutorial attendees either as a total across tutorials or by individual tutorial.

All survey forms, with the exception of 4 that were returned by mail, were electronically scanned by the staff at the University of Michigan Office of Evaluations and Examinations. To verify scanning accuracy, a small number of paper survey forms were randomly selected and checked against the spreadsheet. No discrepancies were discovered. In addition, if a respondent selected more than one answer, and we were not able to determine the answer the respondent wished to give, we treated the item as if no response was given. This occurred infrequently, and these cases were investigated and corrected where possible. Where correction was not possible, the response for the item in question was deleted.

Using the SPSS statistical package (Version 14.0 for Windows which was used for all statistical analyses in this report), the data set was then checked for missing values. Descriptive analyses, primarily in the form of frequencies, were completed for all of the questions. We also cross-tabulated the demographic data we collected such as gender, year of highest degree, and educational level with many of the survey items; we found almost no associations between these variables and degree of satisfaction. Finally, open-ended responses were manually entered into the data file and subsequently coded for analysis.

Results

This section begins with a description of the general attributes of the survey respondents. The second section presents results regarding respondents' satisfaction with the tutorials as a whole, and the third portion summarizes responses to open-ended questions. Overall, respondents were positive about their experiences, but we have noted places where differences in satisfaction level vary among tutorials or by type of respondent. More detailed information about the responses for each tutorial can be found in Appendix B, which is intended to provide feedback for the tutorial instructors and for TeraGrid personnel.

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[1] A list and description of the tutorials is available at http://teragrid.org/events/2006conference/tutorials.html.

General Attributes of Respondents

Of those who answered the question regarding gender (n=103), 76%[2] were male and 24% were female.[3] Most respondents (80%) had a graduate degree with 40% holding a Masters degree and another 40% having a PhD or equivalent degree. Respondents represented 35 unique institutions, most of which were institutions of higher learning, although research centers and commercial research laboratories were also represented. Almost half of all respondents (49%) received their highest degree in this decade while 31% received it in the decade prior. The majority of respondents were information professionals with such diverse titles as Grid Analyst and Unix Systems Specialist. Educators, research scientists, professors, and graduate students were also represented in the survey responses.

Figure 1 presents the percentage of respondents attending each of the eight tutorials offered. We received the most responses from attendees of the *Developing Web Services for TeraGrid* tutorial (21%) and the least from the *Hierarchical Data Format (HDF5)* tutorial (3%).
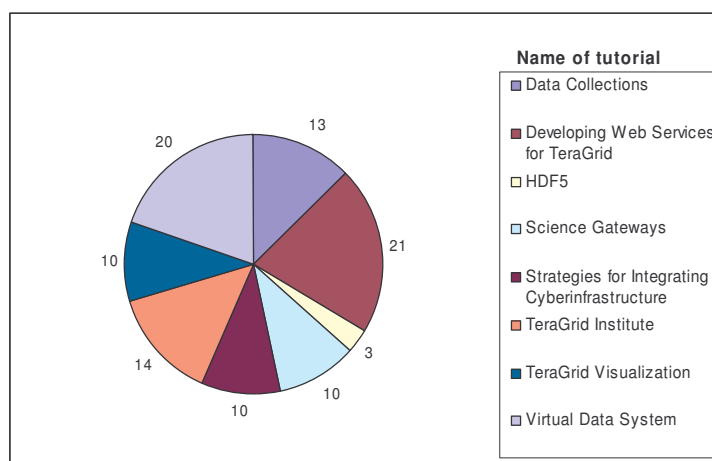

Figure 1: Percentage of attendees at each tutorial

The majority of survey respondents (68%) learned about the tutorials through the TeraGrid web site. Another 27% noted finding out about them from TeraGrid personnel or through a friend or colleague. Of those respondents (9%) who noted "other" as their answer, the majority cited the TeraGrid '06 Conference as their source of information about the course. (Respondents were asked to select all means by which they learned about the tutorial, so the total for the frequencies shown in Figure 2 is greater than 100%.)

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[2] All percentages are rounded up in this report.
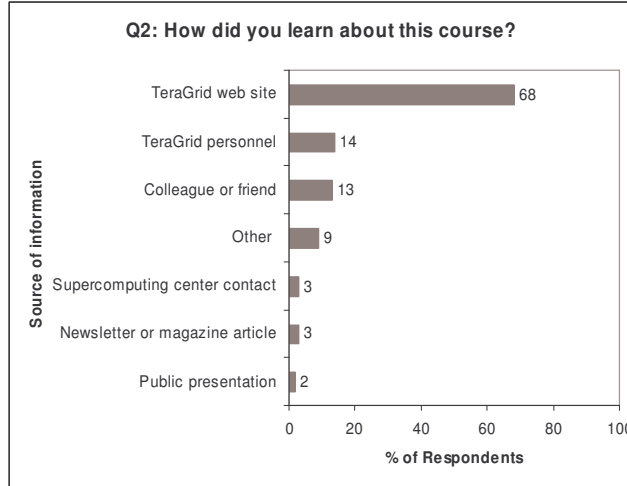[3] Note that 11% of respondents (n=13) chose not to answer this question.

Figure 2: Sources of information about tutorial

Question 3 asked attendees to assess their knowledge of TeraGrid prior to the tutorial. The results show that tutorial attendees comprised a variety of knowledge levels. 17% of respondents considered themselves experienced users of TeraGrid while another 21% were new or recent users. Almost one-third (30%) of respondents indicated that they had only basic knowledge of TeraGrid before the tutorial.
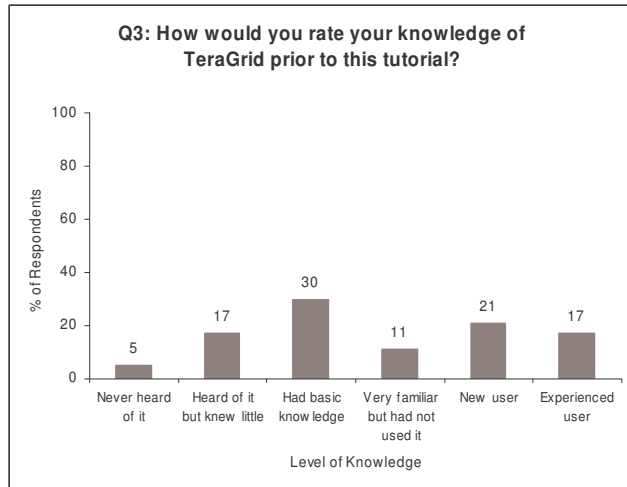

Figure 3: Respondents' knowledge of TeraGrid prior to tutorial

Most of the respondents (71%) had not attended other TeraGrid education, outreach or training events, but the majority (83%) indicated that they would attend another educational event sponsored by TeraGrid.

Assessment of Tutorials

Questions 4 and 5 each included 7 sub-questions that asked respondents to rate various aspects of the tutorial they attended according to a 5-point Likert scale. The discussion and figures in this section focus on the responses across all tutorials. In general, those who completed the survey were very pleased with all aspect of the tutorials; a couple of exceptions are noted below.

Question 5.1, which asked respondents to assess the tutorial as a whole, received an overwhelmingly positive response with the majority of respondents rating their tutorial as either good or very good (82%). A gamma test to measure association between level of experience and satisfaction with the tutorial as a whole revealed that those who identified themselves as experienced users in question 3 rated their tutorial slightly lower than the average, but they were still generally satisfied with the tutorial as a whole.
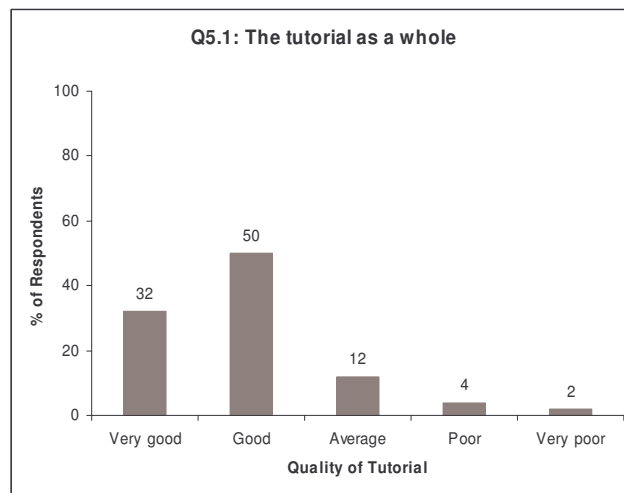

Figure 4: Quality of tutorial overall

In addition, the majority of respondents (85%) agreed that the objectives of the tutorial they attended were clear and that it deepened their knowledge of the topic (81%).
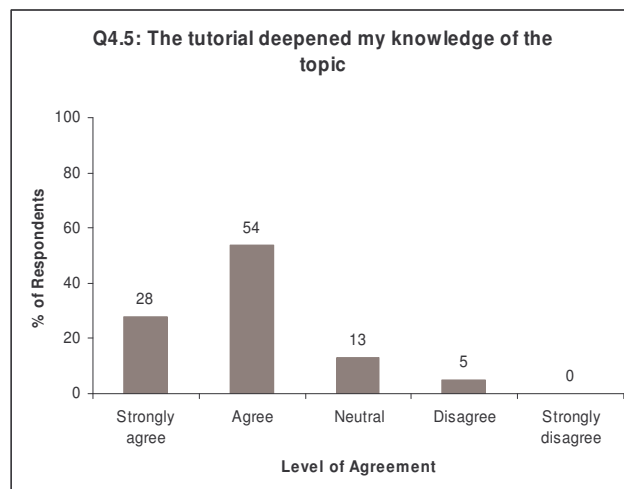

Figure 5: Tutorial deepened knowledge of the topic

When asked if they gained practical knowledge from the tutorial, most attendees agreed (75%) that they had. However, attendees of the *Science Gateways* workshop responded differently; 54% either disagreed or were neutral about the statement. Over 60% of all survey respondents planned to use *some* of what they learned at the tutorial in their work or teaching. There was less agreement with a statement that asked respondents if they planned to use a *substantial* amount of what they learned in their work or teaching; 42% agreed with this statement while an equal percentage remained neutral.

An item (Q4.3) that asked respondents to indicate the degree to which the tutorial met their expectations revealed some differences among tutorials. Most respondents were satisfied in this regard, with two exceptions. Almost half of the attendees (47%) of the *Data Collections* tutorial that responded to the survey were neutral concerning the fulfillment of their expectations. Similarly, attendees of the *TeraGrid Institute* tutorial either felt that their expectations were not met (12%), or they remained neutral (38%). The open-ended responses associated with these tutorials provide some insight into the reasons for the number of neutral responses and dissatisfaction. Several respondents mentioned that they anticipated a more hands-on approach to the materials, which suggests that the tutorials did not meet this specific expectation.

Most of the respondents (75%) noted that they would recommend the tutorial they attended to others, while only half of the attendees of the *TeraGrid Institute* tutorial indicated that they would do so. The open-ended responses for this tutorial indicate that attendees who responded to the survey wanted a more practical approach with a slower pace. Open-ended responses for each tutorial can be found in Appendix B.

In another question, we asked respondents to rate the quality and style of the material presented in the tutorials. Respondents generally judged the content and the organization of the tutorials to be good (see Figure 6). However, the tutorial handouts and the length of the session were problematic for some respondents. In term of handouts, attendees of the following tutorials rated them as either average or poor: *Data Collections*, *Science Gateways*, *TeraGrid Institute*, and *TeraGrid Visualization*. We suspect that some of this is due to the fact that handouts were not available at all tutorials since some respondents made a note of this on the survey.
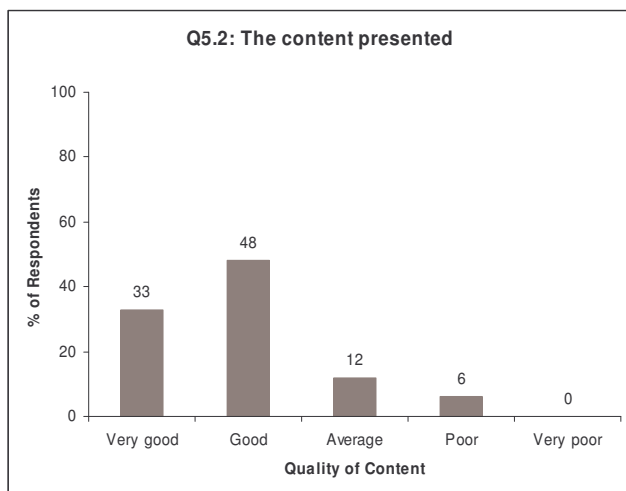

Figure 6: Quality of the content presented

In terms of the comfort of the room, women were more likely than men to be dissatisfied with this aspect of the tutorial they attended. For example, 16% of the women judged the comfort of the room as poor compared with 3% of the men, and only 60% of women rated it as good or very good compared to 84% of men. A gamma test to measure association between gender and level of satisfaction with the comfort of the room was moderately significant. Some of this dissatisfaction may be due to room temperature. Four individuals, all of whom were women, noted next to this item that the room in which their tutorial was held was cold. Two of these respondents participated in the *Data Collections* tutorial and two attended the *Strategies for Integrating Cyberinfrastructure within Education* tutorial.

In regard to tutorial length, respondents were least satisfied with the *Science Gateways* and the *TeraGrid Institute* tutorials; 55% and 50% respectively noted it was average or poor. As stated above, open-ended responses for the TeraGrid Institute indicated that attendees who responded to the survey wished for a slower pace, which may account for the responses regarding tutorial length. Over half of the respondents found that the materials presented were stimulating with the exception of the *Science Gateways* and the *TeraGrid Institute* tutorials. Finally, the majority of survey respondents (76%) were pleased with the tutorial presenters.

Response to Open-Ended Questions

The survey included three open-ended questions that asked respondents to identify the one most valuable thing about the tutorial they attended (Q8), a suggestion for improvement (Q9), and other tutorials that they would like to see offered (Q10). Of those who responded (n=84) to the question about the most valuable aspect of the tutorial, 40% cited gaining an overview of some aspect of TeraGrid as most useful. In terms of suggestions for improvement, over one-quarter (28%) of those who responded (n=65) would change the presentation in some way (i.e. more readily available handouts, better organization). Others asked for a more hands-on approach to the material being presented (15%). Interestingly, the responses were further divided among those who found the tutorial too advanced (20%) and too introductory (15%). The former found the tutorial they attended to be too fast-paced without enough of an introduction while the latter wanted more detail and instruction in their tutorial. Few respondents answered question 10 (20% of all respondents, n=23). The most common workshops requested were a hands-on introduction to the TeraGrid (22%), which was made primarily by those who attended the *TeraGrid Institute* and a more detailed approach to Globus Toolkit (22%), especially version 4, which was requested by individuals who attended the *Developing Web Services* tutorial.

Discussion

The results from the tutorial evaluation survey generally reveal that the tutorials were a success. Respondents overwhelmingly felt that they gained a deeper understanding of the topic at hand and planned to use what they learned in their work or teaching. Most respondents would attend other educational, outreach, or training events sponsored by TeraGrid. The results also show that some tutorials were more successful than others in terms of the way the material was presented. Some respondents were displeased with the handouts available to them while others felt they could have benefited from more hands-on exposure to the topic. Responses to open-ended responses suggest that some attention should be paid to the level of the tutorial and the ability of the attendees. Offering introductory tutorials in which attendees are given practical step-by-step

training in tandem with more advanced tutorials geared at experienced users could be beneficial in meeting the needs of a wide variety of users.

Acknowledgments

Appendix A: Survey Instrument

TeraGrid Education, Outreach, and Training Survey

This survey is being given to all individuals who participate in TeraGrid education, outreach, and training (EOT) events. We would greatly appreciate your taking 5-10 minutes to share your opinions with us. This survey is part of a larger study, funded by the National Science Foundation, which is being conducted at the University of Michigan to better understand how to support the needs of present and future users of cyberinfrastructure. You may not directly benefit from this study; however, the results of this effort will help TeraGrid to improve its education, outreach, and training activities. It is not possible to do this without responses from individuals engaged in these activities, which means that *your response is very important to us.*

Your participation in completing this survey is voluntary. You may skip questions, and you are free to withdraw at any point. Your responses will be used for research purposes only and will be kept in secure locations at the University of Michigan. Only primary members of the research team at the University of Michigan will have access to these data. Furthermore, any personal information will be presented only in an aggregate form in reports and publications. Individual responses will not be identifiable. If you have any questions regarding your rights as a participant in this research, please contact: Institutional Review Board, 540 East Liberty Street, Suite 202, Ann Arbor, MI 48104-2210, Tel: 734-936-0933, E-mail: irbhsbs@umich.edu.

Please complete this survey before you leave today. If you are not able to do this, you may return it by postal mail. Please send it to Dr. Ann Zimmerman, University of Michigan, School of Information, 1075 Beal Avenue, Ann Arbor, MI 48109-2112.

Thank you in advance for taking time to complete this important survey. If you have additional questions or concerns, please contact us via e-mail at asz@umich.edu or by calling 734-764-1865.

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1. Please circle the name of the event you attended

Data Collections
Developing Web Services for Use on TeraGrid
Hierarchical Data Format (HDF5)
Science Gateways
Strategies for Integrating Cyberinfrastructure within Education
TeraGrid Institute: User Introduction to the TeraGrid
TeraGrid Visualization Tutorial
The Virtual Data System: A Workflow Toolkit for TeraGrid Science Applications
Other (Please specify: _____)

2. How did you learn about this course? (Please circle all that apply)

1) TeraGrid web site
2) A web site other than TeraGrid
3) Poster or flier
4) Newsletter or magazine article
5) Public presentation

6) TeraGrid personnel
7) Supercomputing center contact
8) Colleague or friend
9) Other (Please specify: _____)

3. How would you rate your knowledge of TeraGrid prior to this event?
(For the purpose of this survey, TeraGrid is defined as integrated computational resources that includes high-performance computers, data resources and tools, and specialized scientific instruments.)

1) I had never heard of TeraGrid before.
2) I had heard of TeraGrid before, but I knew little or nothing about it.
3) I had basic knowledge about TeraGrid and its purpose, but I had not used it.
4) I was very familiar with TeraGrid and its purpose, but I had not used it.
5) I am a new or recent user of TeraGrid.
6) I am an experienced user of TeraGrid.

4. Please indicate the extent to which you agree with the following statements with regard to this event.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
a. The objectives were clear.					
b. I would recommend this event to others.					
c. The event met my expectations.					
d. I gained practical knowledge from this event.					
e. The event deepened my knowledge of the topic.					
f. I plan to use some of what I learned at the event in my work or teaching.					
g. I plan to use a substantial amount of what I learned at the event in my work or teaching.					

5. How would you rate each of the following?

	Very Good	Good	Average	Poor	Very Poor
a. The event as a whole?					
b. The content presented?					
c. The organization of the event?					
c. The handouts?					
d. The length of the event?					
e. The comfort of the room?					
f. The degree to which the subject matter was made stimulating or relevant?					
g. The overall effectiveness of the presenter or presenters?					

6. Have you attended other TeraGrid education, outreach, and training events?

   1) Yes
   2) No
   3) Don't know

7. Would you attend another education, outreach, and training event offered by TeraGrid?

   1) Yes
   2) No (Why not? _____)
   3) Don't know

8. What was the one most valuable thing to you about this event?

9. If you could make only one change to improve this event, what would that change be?

10. Are there other tutorials, workshops, and so on that would you like to see offered?

These answers will remain confidential and secure. All personal information will be presented only in an aggregate form in reports and publications.

11. Your institutional affiliation:

12. Job title:

13. What is your highest degree?
   1) High school diploma
   2   BS or BA
   3) MS or MA
   4) Ph.D. or equivalent
   5) Other

14. In what year did you receive your highest degree?

15. Your gender

   1) Male
   2) Female

THANK YOU for taking the time to give us your feedback!

Appendix B: Feedback for Instructors

This appendix is intended to provide constructive feedback based on the survey results for each of the eight tutorials. The results presented reflect analyses of responses to questions 4, 5, 8, 9, and 10 from the survey because these items are the most relevant to the tutorial content, structure, and overall quality. As noted previously, since we do not have data on the number of people who attended each tutorial, we cannot make judgments about how well the responses received might represent the opinions of those who attended the tutorials.

Data Collections

Question 4

Fifteen attendees of this tutorial responded to the survey. Their responses to the statements in question 4 were mostly positive. For example, 93% of the respondents either agreed or strongly agreed with the statement: "tutorial objectives were clear," and 80% said they would recommend the tutorial to others. None of the respondents disagreed with either of these two statements. When asked if the tutorial met their expectations, almost half of the respondents (47%) indicated they were neutral, but 40% strongly agreed and 13% agreed that their expectations had been met. 80% of respondents noted that they gained practical knowledge from this tutorial, and 73% felt that their knowledge of data collections was deepened as a result of attending the tutorial. Overall, these results reflect general satisfaction with the tutorial. Respondents, however, were not as certain about applicability of the tutorial to their work or teaching. When asked if they planned to use *some* of what they learned in their work or teaching, 36% were unsure while 65% agreed that they would. When asked if they planned to use a *substantial* amount of what they learned, 21% disagreed and 43% were neutral, possibly reflecting an uncertainty about how to practically apply what they learned to their work.

Question 5

Respondents overwhelmingly rated the quality of this tutorial as good or very good (93%). 80% of respondents found the content presented to be good or very good, and 74% rated the organization of the tutorial as good or very good. When asked about the tutorial handouts, the attendees who responded to the survey mostly viewed them as average (46%) with 16% judging them to be poor or very poor. It is difficult to ascertain the reason for these sentiments from the results. The majority of respondents (87%) appreciated the length of the tutorial while only 47% viewed the room as comfortable. This may be a factor of the temperature of the room since two respondents made a note directly on the survey about the coolness of the room and one person noted the same in the response to question 9. 73% of respondents found the material presented to be stimulating and/or relevant and 86% found the presenter(s) to be effective.

Open-Ended Responses

According to the open-ended responses, the majority of the respondents found the most valuable aspect of the tutorial to be exposure to specific tools and resources, particularly the Storage Resource Broker (63%) while approximately one-third (33%) desired a more hands-on approach to the tutorial and a less SDSC-specific presentation (33%). A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Learning about data storage options
The practical knowledge of resources available and how to use them
Info about TG data collections
Overview of the data center at San Diego Supercomputing Center
The definition about the various storage
SRB TG access info
SRB
The fact that there are data collections open to the general public

Question 9: If you could make only one change to improve this event, what would that change be?

More realistic demo (e.g. accessing some NVO? data)
Able to participate in tutorial
A TG/SRB guest account so we could work along
Less SDSC specific!
Less SDSC-centric
Raise the room temperature

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?

I would like more info on current data collections
There are other tutorials that are offered but the timing conflicts

Developing Web Services for Use on TeraGrid

Question 4

Twenty-four attendees of this tutorial responded to the survey. Overall the responses to the statements in questions 4 and 5 were positive. For example, 92% of respondents felt that the tutorial objectives were clear and 68% would recommend the tutorial to others. However, 13% would not recommend the tutorial and another 21% were neutral on this statement. When asked if the tutorial met their expectations, the distribution of responses was similar to the previous statement with 16 of the respondents agreeing and 8 either disagreeing or neutral. 75% of attendees who responded to the survey, however, agreed that they had gained practical knowledge from the tutorial and the same percentage found that their knowledge of Web services on TeraGrid was deepened as a result of the tutorial. When asked if they planned to use some of what they learned in their work or teaching, 33% were unsure while 58% agreed. When asked if they planned to use a substantial amount of what they learned, 17% disagreed and 54% were neutral, possibly reflecting an uncertainty about how to practically apply what they learned to their work.

Question 5

Most respondents rated this tutorial as good or very good (76%), and the same percentage were pleased with the content of the tutorial. 87% rated the organization of the tutorial as either good or very good while 83% were satisfied with the handouts. 70% found the length of the tutorial to be either good or very good and 72% were satisfied with the comfort of the room. Most of the respondents found that the material presented was either stimulating or relevant (62%), but 30% felt that the material was poorly presented. Despite this, 76% of respondents rated the overall effectiveness of the presenter(s) as either good or very good.

Open-Ended Responses

According to the open-ended responses, the majority of the respondents found the most valuable aspect of the tutorial to be exposure to specific tools and resources (36%) and the demonstrations (29%). Many respondents (62%) indicated that the tutorial seemed too advanced and recommended a slower pace and more of an introduction. A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Resource stateful web services
Links to more detailed references covering the material
I learned some of the operations that can be performed with web services
The examples
The example code given was most useful, along with the exercises
Everyone ended up running real grid services on their own laptops which will work after the tutorial, and saw how they work with external registries, etc.
The structure of the application
Practice experience
Overall picture of how GTK4 works
Concepts
Hands-on experience
Having the HTML tutorial to follow
New concept
The tutorial framework makes learning easier than off the web

Question 9: If you could make only one change to improve this event, what would that change be?

Give more time on GT4 architecture
More explanation of the concepts & technologies; less rushed, route editing of files
Slightly more lecture but not too much
Explain concepts
The structure and content
It was never clear how any of this relates to normal Globus use or TG; more explanation and fewer busywork exercises would be better! Next time, have files online not on a ?; also most of the room had no power outlets; very poor facilities planning!
More introduction & scope before letting people loose to do the exercises; what are we going to do what will we see, what does it mean, where does it fit? Context & plan for the tutorial
More presentation; explain what's going on; uncommenting code is not a good way to learn
Longer, start from the beginning
Get enough time for all the attendees
Show agenda (with time frames) all the time not just occasionally; helps me pace progress
More details
Add background in the beginning

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?

Customizing GT4 service development
More info on different things that the GT4 W5 can do
Seeing more on how GT4 W5 relates to TG use, etc would be nice; perhaps this is more of a talk than a tutorial
Don't know yet; maybe after I digest what I learned today

Alts. to Globus that are simpler
Yes, on how to use TG
Overview of the tools in Globus Toolkit; what are all the binaries/tools

Hierarchical Data Format (HDF5)

Question 4

Four attendees of this tutorial responded to the survey. Responses from these attendees were overwhelmingly positive. For example, none of the respondents disagreed or were neutral on six out of seven of the statements in question 4. Three of the four respondents strongly agreed that the tutorial objectives were clear, that they would recommend the tutorial to others, and that the tutorial met their expectations; one person agreed with those statements. All of the respondents either agreed or strongly agreed that they gained practical knowledge from the tutorial, that their knowledge of HDF5 was deepened, and that they planned to use some of what they learned in their work or teaching. However, when asked if they plan to use a substantial amount of what they learned in their work, one of the respondents disagreed.

Question 5

All of the respondents were satisfied overall with the tutorial, the content presented, the handouts, the length of the tutorial, and the comfort of the room. All of the respondents also found the material stimulating or relevant and the effectiveness of the presenter(s) to be good or very good. 100% of the respondents rated every statement in question 5 either good or very good with no average or poor ratings.

Open-Ended Responses

According to the open-ended responses, the respondents found the most valuable aspect of the tutorial to be exposure to HDF5. A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

The overall "big picture" of what HDF5 & PHDF5 are and where to get the libraries and documentation
Info about what HDF5 is, how to use it

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?

UMI MPI architecture; MPICH - g2 tutorial

Science Gateways

Question 4

Eleven attendees of this tutorial responded to the survey. Overall, responses to the statements in question 4 were generally positive, however, some of the statements elicited a high percentage of neutral responses, which are described in more detail below. 64% of respondents agreed that the tutorial objectives were clear while 27% indicated they were neutral, and one person disagreed. 73% would recommend the tutorial to others, but 27% were unsure. The same percentage (73%) felt that their expectations were met while three individuals either disagreed or were neutral on that statement. When asked if they gained practical knowledge from the tutorial, respondents

were mostly split between answering neutral (46%) and either agreeing or strongly agreeing (45%). Most of the respondents (73%) felt that their knowledge of science gateways was deepened by the tutorial and 54% planned to use what they learned in their work or teaching. However, the majority of respondents (64%) responded with neutral when asked if they planned to use a substantial amount of what they learned in their work or teaching and 18% disagreed.

Question 5

Respondents overwhelmingly judged this tutorial as good (72%) or very good (18%) with only one person citing it as average. The content presented was also judged to be either good or very good by the majority of respondents (91%). 63% found the organization of the tutorial to be good or very good, but the majority of respondents either judged the handouts to be poor or average (66%). The question may not have been applicable if the attendees were not given handouts. More than half of the respondents (55%) found the length of the tutorial to be average, but 91% were pleased with the comfort of the room. Over half of the respondents (55%) rated "the degree to which the subject matter was made stimulating or relevant" as average; the remainder judged it as good or very good. Finally, 64% of the respondents found the overall effectiveness of the presenter(s) to be either good or very good.

Open-Ended Responses

According to the open-ended responses, the majority of the respondents found the most valuable aspect of the tutorial to be a general overview of science gateways (44%). In response to question 9, which asked them for a suggestion for improving the tutorial, respondents equally wanted a more hands-on approach (29%) and cited problems with the room such as the lack of power strips for their computers (29%). A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Exposure to various (different) gateways
As a scientist involved with science gateway development, information on gateway development groups & information (standards) was most useful
I can grasp the general concept of how each grid component is organized
To hear about all the different approaches
The utilization parts of nanohub
Hands-on work
Knowing about the diverse fields interested in using TG
At a high level, see what other developers are doing
Seeing presentation on multiple gateways in a common context.

Question 9: If you could make only one change to improve this event, what would that change be?

More hands-on
Giving a schedule table in advance would be a great help (or giving presentation material is a good idea)
More united presentations instead of separate teams
Power strips on all tables
As a potential TG user, I might've liked to see more explicit examples of the enabled science; I thought the presentations were focused on infrastructure
Power strips for everyone not just first two rows; tutorial description says that I would learn practical principles/techniques; it was more introductions to the gateways; more for users than developers
Smoother setup of user accounts for hands-on

OGSA W5 nuts and bolts as related to portal
A tutorial on emerging standards for TG portal projects would be useful for portal/gateway designers
"Practical web services"
Maybe short presentation of specific science applications
If TG were to embrace particular grid/portal/gateway building software, a tutorial using this software
would be nice

Strategies for Integrating Cyberinfrastructure within Education

Question 4

Twelve attendees of this tutorial responded to the survey. Responses to the statements in
question 4 were overwhelmingly positive. For example, all respondents agreed that the tutorial
objectives were clear and that they would recommend this tutorial to others. In addition, all
respondents felt that their expectations had been met by the tutorial. All but one respondent
(who responded neutral) found that they had gained practical knowledge from the tutorial.
Again, all respondents agreed that the tutorial had deepened their knowledge of the topic at hand.
When asked if they planned on using some of what they learned in their work or teaching, all but
one agreed. However, two people were uncertain about the applicability of a substantial amount
of what they learned to their work or teaching.

Question 5

The responses to the statements in question 5 were also very positive with no one judging any
aspect of the tutorial as poor. All the respondents found the tutorial overall to be good. The
content and the organization of the tutorial were also judged to be good or very good by all of the
respondents. Only one person found the handouts to be average while the rest judged them as
good; the same responses were received regarding the length of the tutorial. Respondents were
less enthusiastic about the comfort of the room as over one-third (36%) of them judged it to be
average. Most of the respondents (88%) found that the material was presented in a stimulating
and/or relevant manner. All of the respondents judged the overall effectiveness of the
presenter(s) as good or very good.

Open-Ended Responses

According to the open-ended responses, the respondents valued the opportunity to meet with the
other tutorial attendees and to gain an overview of TeraGrid; these comments were made by 36%
and 27% of the respondents respectively. Of those that responded to question 9, several
respondents cited concerns with the presentation format of the tutorial (43%). A list of all of the
open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Seeing and trying tools with developers and support; and meeting people with similar interests and goals
Discovering users of TG for research & education goals; variety of grid tools available
Availability of these tools
Availability of existing resources
Learning applications that are available on & accessible the grid
Relevant info to use grid infrastructure for teaching

Better understanding of TG potential
Collaborative online sites and meeting the personnel
Making contacts in Grid / EPO
Learning about practical current applications of grid computing to education problems in science, i.e. extending the ability to teach concepts/use more sophisticated tools
Feedback from people of varying backgrounds. Access to online tools freely available on nanohub site

Question 9: If you could make only one change to improve this event, what would that change be?

Have slides, handouts, materials, etc online before presentation
More time on in class use; opportunity for participation by students (more needed)
More applications
Make sure presenter's slides are working
Make the room warmer
Not having the AC up so high
I would like to have some discussion time for participants to go over where they are from (which fields) and their interests in this tutorial

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?
Successful EO TG programs and impact/evaluation results
International cooperation in grid computing

TeraGrid Institute: User Introduction to the TeraGrid

Question 4

Sixteen attendees of this tutorial participated in the survey. Responses to the statements in question 4 are generally positive, although some sub-questions received a number of neutral and disagree responses. The tutorial objectives were clear to 75% of the respondents. Over half (53%) indicated that they would recommend the tutorial to others while one-third (33%) were neutral and 14% disagreed. Less than half of the respondents (47%) felt that their expectations had been met and another 40% were neutral. Almost three-quarters of respondents (73%) indicated that they had gained practical knowledge from the tutorial, but 20% disagreed. Most respondents (80%) felt that they had gained a deeper knowledge of the topic. 60% of respondents planned to use some of what they learned in their work or teaching, but only 33% agreed that they would use a substantial amount of what they learned in their work or teaching and almost half of respondents (47%) were neutral regarding this.

Question 5

64% of respondents found the tutorial overall to be good or very good while one person judged it very poor and 25% said it was average. 73% were pleased with the content, but fewer respondents (54%) thought the organization was good or very good. Over half of the respondents (53%) found the handouts to be average. The same percentage of respondents (47%) found the length of the tutorial either average or good, and nearly all respondents (93%) found the room to be comfortable. Less than half of those who took the survey (47%) found the material presented to be stimulating and/or relevant. 60% of respondents judged the overall effectiveness of the presenter(s) to be good or very good while 33% judged it to be average.

Open-Ended Responses

According to the open-ended responses, the majority of the respondents found the most valuable aspect of the tutorial to be a general overview of TeraGrid (53%). In response to question 9, respondents suggested a more hands-on approach and had some complaints about the general presentation of the tutorial. Several respondents would like to see a getting started with TeraGrid tutorial available. A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Exposure to TG concepts and architecture
The overview of the TG by Sergiu was extremely valuable
Software infrastructure details
Overview
Every grid project uses database to maintain the metadata; I am curious what they store and they use it
Log on/access to TG resources and SRB
General overview of the TG and its capabilities
Demos about how to run actual sessions
Get a broad overview of what TG has to offer
Buzz word & acronym clarification; very well done
SDSC SRB
Overview of TG
I gained a few more pieces of the big picture of TG
General understanding of TG
An overview of the jargon

Question 9: If you could make only one change to improve this event, what would that change be?

Hand-outs available for each presentation before it starts
More on user support
Better organization and logical flow
Special references or configuration of platform including database
More interactive elements
Better training for certain presenters on how to effectively present material
Let us try and do some relevant exercises ourselves after/while it is explained
Hands on work on the TG
Have presenters slow down; we're in a tutorial because we're ignorant; give presenters more time or take two days for sessions
Actually have a small hands on session
More how-to's and less applications - also need hands on tutorials
Have presenters define their terms, like CTSS, this tutorial is supposed to be an introduction
Hands on! That's what I expected. The web page said speakers that speak clear English, have an ssh client. This was a waste of a day. I still don't know where to start.

 Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?

I am interested in seeing anything about user support for the TG
Hands on "getting started with TG"
A workshop where the users can log in to TG and try some of it out under supervision/help
I want a "book" about TG; it could be in electronic form and updated as needed

TeraGrid Visualization

Question 4

Eleven attendees of this tutorial responded to the survey. Responses to the statements in question 4 were generally positive. For example, 91% of respondents found the tutorial objectives to be clear and 72% would recommend the tutorial to others. Most respondents (9 out of 11) found that the tutorial met their expectations while 73% felt they had gained practical knowledge. A majority of those who completed the survey (90%) agreed that they had gained deeper knowledge about visualization, and 82% planned to use some of what they learned in their work or teaching. Over half of the respondents (69%) were neutral regarding whether they would use a substantial amount of what they learned in their work or teaching.

Question 5

Most respondents (82%) judged the tutorial to be good or very good overall while one individual found it very poor and another said it was average. 82% of respondents judged the content of the tutorial to be good or very good. Most (73%) were pleased with the organization of the tutorial, but half of the respondents found the handouts to be average and 30% noted that they were poor or very poor. 82% appreciated the length of the tutorial and most (91%) found the room to be comfortable. 82% found that the subject matter was presented in a stimulating and/or relevant manner and the same percentage judged the overall effectiveness of the presenters as good or very good.

Open-Ended Responses

According to the open-ended responses, nearly one-third of the respondents (30%) who answered question 8 found the most valuable aspect of the tutorial to be a general overview of the topic. In response to question 9, some respondents had complaints about the overall presentation of the tutorial (43% of those who answered the question). A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Practical details
Learning about vis capabilities on the TG in regard to Paraview/VTC
People are willing to help if asked for
An overview of the visualization facilities available on the TG
Talking tho? resources provides? (trouble reading handwriting)
Hands on tutorials
Exposure to several types of remote visualizations
Overview
Well thought out hands-on tutorial. Modest (achievable). Not too difficult. Some anticipation of common errors. Some quick troubleshooting
Running paraview/ from server online and visualizing on client machine

Question 9: If you could make only one change to improve this event, what would that change be?

More presenters
They should be well planned and outlined
More discussion of differences between the viz approaches & advantages/disadvantages
Better network; fast wired to laptops
More hands on tutorial

Handling demos even more. More proctors helping attendees
Prepare and copy the slides for the audience

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?
Web service

The Virtual Data System: A Workflow Toolkit for TeraGrid Science Applications

Question 4

Twenty-two attendees of this tutorial responded to the survey. The majority of respondents agreed or strongly agreed to the statements in question 4, although in some cases there was a portion of respondents who were neutral or who disagreed. For example, 77% of respondents felt that the tutorial objectives were clear while 23% were neutral. Over three-quarters (77%) indicated that they would recommend this tutorial to others, and only one individual stated that he/she would not. 66% felt that their expectations had been met while 14% disagreed. 77% of respondents felt that they had gained practical knowledge from the tutorial and 82% believed that their knowledge of the topic had deepened. 64% plan to use some of what they learned in their work or teaching, and 23% disagreed that they would use a substantial amount of what they learned in their work or teaching and the same percentage answered neutral.

Question 5

78% of respondents judged the tutorial to be good or very good overall. The same percentage were pleased with the content of the tutorial while slightly fewer (73%) respondents appreciated the tutorial's organization. The tutorial handouts were judged to be good or very good by most respondents (91%) and the length was appreciated by 82%. 80% found the room to be comfortable while slightly over half (59%) of respondents found that the material was presented in either a stimulating and/or relevant manner. 66% judged the overall effectiveness of the presenter(s) to be good or very good.

Open-Ended Responses

According to the open-ended responses, the majority of the respondents who answered question 8 found the most valuable aspect of the tutorial to a general overview of TeraGrid or the VDS (67%). In response to question 9, some respondents had complaints about the pace of the tutorial, judging it to be too advanced (33% of those who answered the question). A list of all of the open-ended comments follows:

Question 8: What was the one most valuable thing to you about this event?

Intro/exposure to VDS
DAC base work flow scheduler
New stuff that I was not aware of before
The problem this project is dealing with
Overall objectives as stated in the opening segment of the tutorial
General overview of VDS
Basic overview & basic hands-on
Pegasus
General guidelines/principles

I understand why I want to do this
Flow and UDL
The mapping between the abstraction and the implementation
Awareness of UDS/UDL
New idea
Good mix of presentation, explanation and exercises

Question 9: If you could make only one change to improve this event, what would that change be?

More specific application
Have one or two more breaks
Presentation
Slow down the exercises at the beginning; try to make examples more meaningful to attract new users; provide a better description of prerequisites for the workshop
Better timing - too long
VDL section should cover over 1/2 as much material; VDL section should use barrier synchronization; do not continue til everyone is ready; do not try to lecture while students try to listen
Discuss relation between Condor/Globus/Pegasus
List steps that we need to use the TG
Give us time to read the web page instead of leading each cond? in the front
Limit the topics and focus on one aspect; get into more details
More clear in advance that it's middleware and difficult to use
More detail

Question 10: Are there other tutorials, workshops, and so on that would you like to see offered?

1/2 day intro to TG; multiple sessions at such a workshop/conference would attract more new users