# MPI 3.0 Survey Results

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# Overview

- Disclaimer
- Review of Survey Questions
- Obvious Results from Atlanta Meeting
- Unanswerable Questions from Data
- Deeper Analysis
- Questions for Forum

# Disclaimer

# Disclaimer

- We are not statisticians.
  - We tried to represent the data in an unbiased manner as possible when attempting to answer the questions posed by the MPI Forum.
- Some of the Forum's questions were modified to turn them into forms that can be answered from the data.
- The results of the survey are meant to be taken as additional input to the MPI Forum members from the broader MPI community.
  - The MPI Forum will decide how significantly they incorporate these responses into the decision making process on a per-response basis.

# Review of Survey Questions

# Survey Question Legend

Brown blocks represent additional text information / instructions that were displayed before a specific question.

Yellow blocks represent questions.

| |
|---|
| Tables represent lists of possible answers |
| Tables represent lists of possible answers |
| Tables represent lists of possible answers |

Green blocks represent text questions.

# 1. Demographics

Did you attend the MPI Forum BOF at SC09?

Yes

No

# 2. Demographics

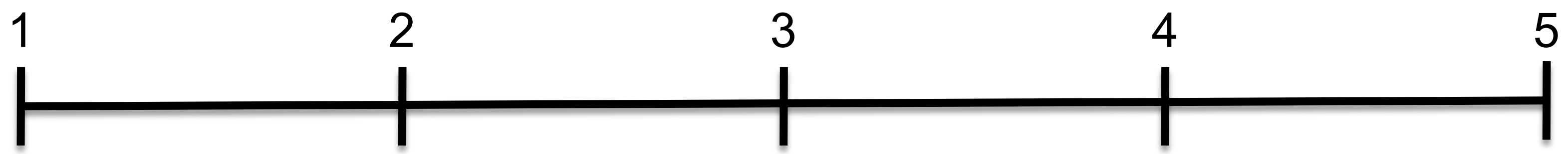
Which of the following best describes you?

| |
|---|
| User of MPI applications |
| MPI application developer |
| Library / middleware developer (that uses MPI) |
| MPI implementer |
| Academic educator / researcher |
| Student |
| Project /program / general management |
| Other |

Other (text)

# 3. Demographics

Rate your expertise with the MPI standard.



1 Not familiar with MPI

2 Knowledgeable of basic MPI

3 Good understanding of some MPI

4 Deeply understand most of MPI

5 Expert in all of MPI

# 4. Apps

Think of an MPI application that you run frequently. What is the typical number of MPI processes per job that you run?
(Select all that apply)

| |
|---|
| 1-16 MPI processes |
| 17-64 MPI processes |
| 65-512 MPI processes |
| 513-2048 MPI processes |
| 2049 MPI processes or more |
| I don’t know |

# 5. Apps

Using the same MPI application from the previous question, what is the typical number of MPI processes that you run per node?
(Select all that apply)

| |
|---|
| 1 MPI process |
| 2-3 MPI processes |
| 4-7 MPI processes |
| 8-15 MPI processes |
| 16 MPI processes or more |
| I don’t know |

# 6. Apps

Using the same application from the previous question, is it a 32 or 64 bit application? (Select all that apply)

| |
|---|
| 32 bit |
| 64 bit |
| I don’t know |
| Other |

Other (text)

# 7. Apps

I expect to be able to upgrade to an MPI-3 implementation and still be able to run my legacy MPI applications *without recompiling*.

| |
|---|
| Strongly Disagree |
| Disagree |
| Undecided |
| Agree |
| Strongly Agree |

Additional comments (text)

# 8. Apps

I expect to be able to upgrade to an MPI-3 implementation and only need to recompile my legacy MPI applications *with no source code changes*.

| |
|---|
| Strongly Disagree |
| Disagree |
| Undecided |
| Agree |
| Strongly Agree |

Additional comments (text)

# 9. Text Opinion

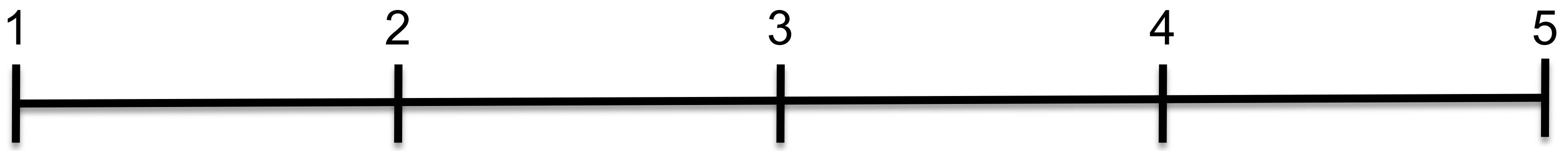
What ONE THING would you like to see added or improved in the MPI standard?

# 10. MPI Functionality

How much are each of the following sets of MPI functionality used in your MPI applications?

- Point to point
- Collective
- Derived / complex datatypes
- Comms. other that MCW
- Grah or Cartesian comms.
- Err. handles other than FATAL

- Dynamic MPI procs.
- One-sided
- MPI_THREAD_MULTIPLE (multiple thr. simul. using MPI)
- Multiple thrs., but only 1 in MPI at a time



| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Not used at all | Trivially used in some places | Used moderately w/ other MPI functionality | Used heavily w/ other MPI functionality | Comprises the backbone of my application |

In the above question, if you marked any set with “Not used at all” or “Trivially used,” please explain why. (text)

# 11. MPI Functionality

Which of the following do any of your MPI applications use?
(Select all that apply)

| |
|---|
| Threads |
| OpenMP |
| Shmem |
| Global arrays |
| Co-processors / accelerators |
| PGAS languages |
| I don’t now |
| Other |

Other (text)

# 12. MPI Functionality

When answering the following question, please remember that that C++ MPI applications can use the C++ and/or C MPI bindings.

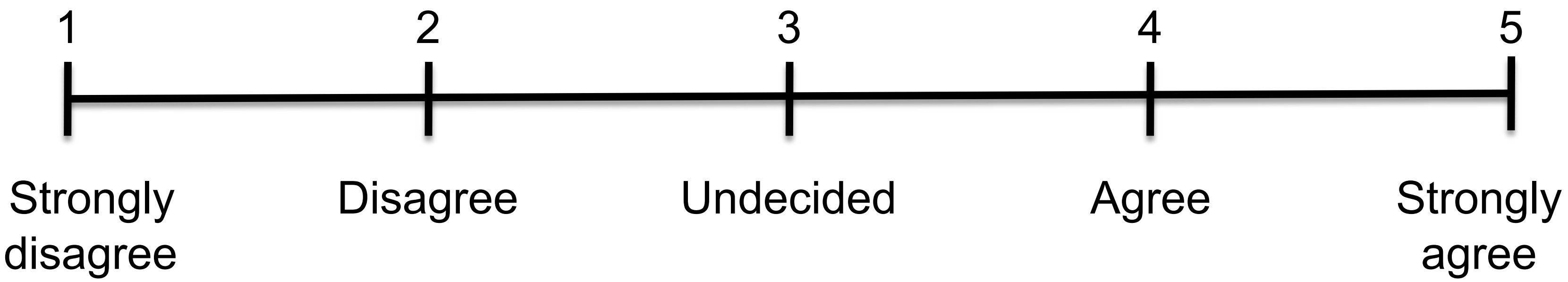
Do you have any MPI applications that are both written in C++ and use the MPI C++ bindings?

| |
|---|
| Yes |
| No |
| I don’t know |

# 13. MPI Functionality

The following question refers to the ability to use extremely large count values with MPI operations such as sending/receiving, file actions, and one-sided operations. It makes the assumption that the largest value that a signed C "int" and a default Fortran INTEGER can represent is 2 billion.

My MPI application would benefit from being able to reference more than 2 billion items of data in a single MPI function invocation.



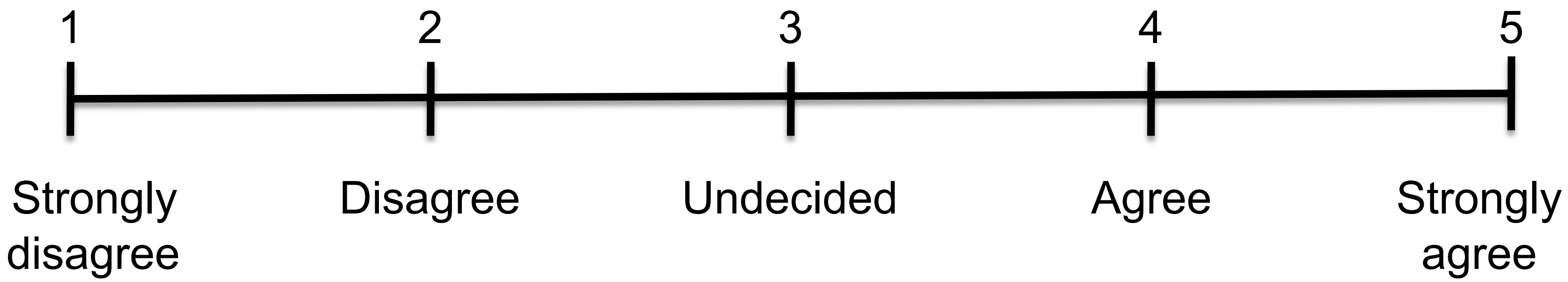
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly disagree | Disagree | Undecided | Agree | Strongly agree |

If you answered “Agree” or “Strongly Agree” to the above question, please explain why. (text)

# 14. MPI Functionality

One-sided remote memory access (RMA) is an advanced MPI concept. The following question assumes familiarity with the complex issues involved and deliberately makes you choose between two options that may or may not be mutually exclusive. The goal is to find out which is more important to you, regardless of whether they are mutually exclusive or not. If you are unsure how to answer and/or are unfamiliar with MPI RMA concepts, feel free to leave this question unanswered.

MPI one-sided communication performance (e.g., message rate and latency) is more important to me than supporting a rich remote memory access (RMA) feature set (e.g., communicators, datatypes).



1 Strongly disagree

2 Disagree

3 Undecided

4 Agree

5 Strongly agree

Please explain your rating to the above question: (text)

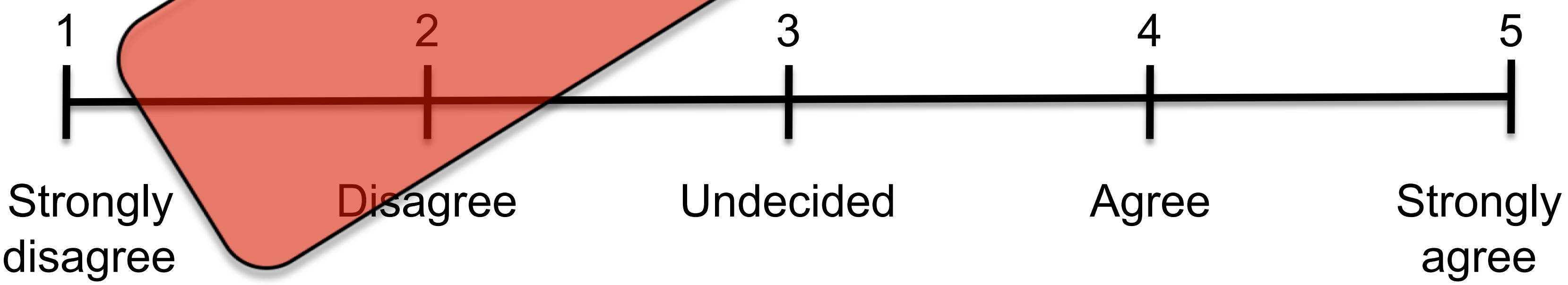
# 15. MPI Functionality

The MPI standard provides certain semantic guarantees that may not be required by a particular application. It also provides functions that many applications never use. The MPI Forum is considering an "assertions" interface that would let an application identify specific functionality it does not depend on, such that an MPI library could improve performance or reduce memory usage by disabling that specific functionality.

The described "assertions" interface would be valuable to my MPI applications.

Question is leading

Discarded



| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Strongly disagree | Disagree | Undecided | Agree | Strongly agree |

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# 16. MPI 3 Possibilities

The following is a broad list of topics that the MPI Forum is considering for MPI-3. Note that it is probably safe to assume that using any of the new functionality will involve at least some degree of change to your existing MPI application (e.g., it is unlikely that MPI-3 applications will automatically become fault tolerant; it is much more likely that you will need to add additional fault tolerant logic using new MPI-3 API functions). If you are unfamiliar with a given topic, feel free to leave its rating blank.

# 16. MPI 3 Possibilities (continued)

Rank the following in order of importance to your MPI applications (1=most important, 6=least important):

| |
|---|
| Non-blocking collectives |
| Revamped one-sided (compared to (MPI-2.2) |
| MPI app. control of fault tolerance |
| New Fortran bindings |
| “Hybrid” programming (MPI in conjunction with threads, OpenMP, etc.) |
| Standardized 3rd party MPI tool support |

# 17. MPI Functionality

Rate the following in order of importance to your MPI applications (1=most important, 5=least important):

| |
|---|
| Runtime performance (e.g., latency, bandwidth, resource consumption, etc.) |
| Feature-rich API |
| Run-time reliability |
| Scalability to large number of MPI processes |
| Integration with other middleware, communication protocols, etc. |

# 18. Text Opinion

Use the space below to provide any other information, suggestions, or comments to the MPI Forum.

# Obvious Survey Results

Presented at the MPI Forum in Atlanta

# Obvious Results from Atlanta Meeting

I expect to be able to upgrade to an MPI-3 implementation and still be able to run my legacy MPI applications *without recompiling*.

| | |
|---|---|
| **Strongly Disagree** | **257** |
| **Disagree** | **372** |
| **Undecided** | **198** |
| Agree | 114 |
| Strongly Agree | 59 |

**83%**

# Obvious Results from Atlanta Meeting

I expect to be able to upgrade to an MPI-3 implementation and only need to recompile my legacy MPI applications *with no source code changes*.

| | |
|---|---|
| Strongly Disagree | 31 |
| Disagree | 76 |
| **Undecided** | **154** |
| **Agree** | **394** |
| **Strongly Agree** | **341** |

**89%**

# Unanswerable Questions from Data

From questions posed by the MPI Forum in Atlanta.

# Unanswerable Questions from Data

- Of respondents running with >8 ppn, are they counting threads as processes?
  - We cannot make assumptions about respondent interpretation of this question
- Why did people mark OpenMP but not Threads?
  - Or: why didn't they mark both OpenMP and Threads?
  - The data does not specify respondent intent
  - We speculated that they viewed OpenMP as a different, higher-level abstraction than threads

# Unanswerable Questions from Data

- How do the Fortran users feel about backwards compatibility?
  - Fortran developers were not identified by the data
  - Respondents were asked to value new Fortran bindings – but that says nothing about whether they were Fortran developers
- Of respondents that do not program in Fortran, how do they rank 'new Fortran' bindings? Of those respondents how many are C++ programmers?
  - Neither Fortran nor C++ developers were identified by the data

# Unanswerable Questions from Data

- How did respondents answer the *recompile only* question in comparison with ‘count’ question?
  - We analyzed this at length and concluded that the correlation is not meaningful
- Rationale:
  - The “recompile only” question is specifically about legacy applications
  - The “MPI count / 2 billion” question is specifically about new MPI-3 functionality
  - In short: straight recompiling (or not) of legacy applications has nothing to do with desire or intent to adopt new MPI-3 functionality

# Deeper Analysis

Questions posed by the MPI Forum in Atlanta.

# Some General Notes

- **`count`**
  - Total of the row or column
- **`%R`**
  - % of subset of the respondent population **considered for this question**
- **`%T`**
  - % of **all** survey respondents
- **`blank`**
  - Respondents that did not answer this question
- **`null`**
  - The respondent dropped out before reaching this question

# Data Slicing: Demographics

- Which of the following best describes you?
- Rate your expertise with the MPI standard.
  - 1 (Not Familiar), 2 (basic), 3 (good), 4 (deep), 5 (expert)

| | 1 | 2 | 3 | 4 | 5 | *blank* | Row Total | % Total |
|---|---|---|---|---|---|---|---|---|
| MPI User | 9 | 92 | 44 | 11 | 2 | 1 | 159 | 11.35 |
| App Devel | 3 | 56 | 193 | 49 | 2 | 0 | 303 | 21.63 |
| Middleware | 1 | 12 | 51 | 35 | 5 | 0 | 104 | 7.42 |
| Implementer | 0 | 13 | 20 | 20 | 1 | 0 | 54 | 3.85 |
| Academic | 12 | 106 | 127 | 44 | 4 | 2 | 295 | 21.06 |
| Student | 14 | 47 | 36 | 5 | 0 | 1 | 103 | 7.35 |
| Management | 1 | 10 | 13 | 4 | 3 | 0 | 31 | 2.21 |
| Other | 2 | 9 | 8 | 6 | 0 | 0 | 25 | 1.78 |
| *blank* | 0 | 2 | 0 | 0 | 0 | 325 | 327 | 23.34 |
| % | 3.0 | 24.8 | 35.1 | 12 | 1 | 23.5 | | |

# What type of user runs with >8ppn?

- 1 (Not Familiar), 2 (basic), 3 (good), 4 (deep), 5 (expert)

```
           | 1  |  2  |  3  | 4  | 5 | blank| R.Total| %R | %T
-----------+----+-----+-----+----+---+------+--------+----+----
  MPI User |  2 |  39 |  25 |  7 | 1 |    1 |     75 | 19 |  5
 App Devel |  1 |  21 |  79 | 28 | 1 |    0 |    130 | 34 |  9
Middleware |  0 |   3 |  13 | 13 | 2 |    0 |     31 |  8 |  2
Implementer|  0 |   6 |  12 |  6 | 1 |    0 |     25 |  6 |  2
  Academic |  3 |  27 |  36 | 14 | 0 |    1 |     81 | 21 |  6
   Student |  0 |   8 |   8 |  2 | 0 |    0 |     18 |  5 |  1
Management |  0 |   3 |   8 |  2 | 2 |    0 |     15 |  4 |  1
     Other |  0 |   5 |   4 |  3 | 0 |    0 |     12 |  4 |  1
     blank |  0 |   1 |   0 |  0 | 0 |    0 |      1 |  0 |  0
```

- Peak at Application Developers, followed by Academic and User.
- Our interpretation: Leading the way for more cores?

# What Respondents Said OpenMP But Not Threads?

- 1 (Not Familiar), 2 (basic), 3 (good), 4 (deep), 5 (expert)

```
           | 1  |  2  |  3  | 4  | 5 | blank| R.Total| %R | %T
-----------+----+-----+-----+----+---+------+--------+----+----
  MPI User |  1 |  19 |  12 |  0 | 1 |    0 |     33 | 15 |  2
 App Devel |  0 |  11 |  56 | 24 | 1 |    0 |     92 | 41 |  7
Middleware |  0 |   1 |   7 |  3 | 1 |    0 |     12 |  5 |  1
Implementer|  0 |   1 |   5 |  2 | 0 |    0 |      8 |  4 |  1
  Academic |  1 |  19 |  26 |  6 | 1 |    0 |     53 | 23 |  4
   Student |  0 |   6 |  10 |  0 | 0 |    0 |     16 |  7 |  1
Management |  0 |   1 |   3 |  0 | 0 |    0 |      4 |  2 |  1
     Other |  0 |   2 |   3 |  2 | 0 |    0 |      7 |  3 |  1
     blank |  0 |   1 |   0 |  0 | 0 |    0 |      1 |  0 |  0
```

- Of those that marked ‘Other’, what did they write?

```
           | count
-----------+-------
blank      |   223
CUDA       |     1
TBB        |     1
mpich2     |     1
```

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# What Respondents Said OpenMP and Threads?

- 1 (Not Familiar), 2 (basic), 3 (good), 4 (deep), 5 (expert)

```
           | 1 |  2 |  3 | 4  | 5 | blank| R.Total  | %R | %T
-----------+---+----+----+----+---+------+----------+----+----
  MPI User | 0 | 14 |  6 |  4 | 1 |    0 |    25    | 11 |  2
 App Devel | 0 | 10 | 34 | 15 | 1 |    0 |    60    | 27 |  4
Middleware | 0 |  2 | 13 | 14 | 2 |    0 |    31    | 14 |  2
Implementer| 0 |  2 |  4 |  8 | 0 |    0 |    14    |  6 |  1
  Academic | 0 | 22 | 20 | 20 | 2 |    0 |    64    | 28 |  5
   Student | 0 |  7 |  7 |  3 | 0 |    0 |    17    |  8 |  1
Management | 0 |  1 |  3 |  2 | 3 |    0 |     9    |  4 |  1
     Other | 0 |  2 |  3 |  0 | 0 |    0 |     5    |  2 |  0
```

# Respondents who said “yes” to OpenMP and / or Threads

- What size nodes do they use?
  - Seems to match current popular hardware trends

```
  1  | 2-3 | 4-7 | 8-15 | >=16 | I don't know
-----+-----+-----+------+------+-------------
 189 | 192 | 265 | 190  | 78   | 12
```

# Respondents who said “yes” to OpenMP and/or Threads

MPI_THREAD_MULTIPLE
(multiple threads simultaneously using MPI)

```
            | count  | %R | %T
------------+--------+----+----
Not at all  |   260  | 52 | 19
 Trivially  |    65  | 13 |  5
Moderately  |    81  | 16 |  6
   Heavily  |    60  | 12 |  4
  Backbone  |    33  |  7 |  2
```

Multiple threads, but only one in MPI at a time.

```
            | count  | %R | %T
------------+--------+----+-----
Not at all  |   179  | 36 | 13
 Trivially  |    83  | 17 |  6
Moderately  |   121  | 24 |  6
   Heavily  |    78  | 16 |  6
  Backbone  |    34  |  7 |  2
```

- How many respondents marked ‘Not at all’ for both of these choices, but still ‘OpenMP’ or ‘Threads’?

```
`confused'| %R
----------+----
   141    | 10
```

# Respondents who said “yes” to OpenMP and/or Threads (Exclude ‘confused’)

MPI_THREAD_MULTIPLE (multiple threads simultaneously using MPI)

```
           | count | %R | %T
-----------+-------+----+----
Not at all |   260 | 52 | 19
 Trivially |    65 | 13 |  5
Moderately |    81 | 16 |  6
   Heavily |    60 | 12 |  4
  Backbone |    33 |  7 |  2
```

```
           | count | %R | %T
-----------+-------+----+-----
Not at all |   119 | 33 |  8
 Trivially |    65 | 18 |  5
Moderately |    81 | 23 |  6
   Heavily |    60 | 17 |  4
  Backbone |    33 |  9 |  2
```

Multiple threads, but only one in MPI at a time.

```
           | count | %R | %T
-----------+-------+----+-----
Not at all |   179 | 36 | 13
 Trivially |    83 | 17 |  6
Moderately |   121 | 24 |  6
   Heavily |    78 | 16 |  6
  Backbone |    34 |  7 |  2
```

```
           | count | %R | %T
-----------+-------+----+-----
Not at all |    38 | 11 |  3
 Trivially |    83 | 23 |  6
Moderately |   121 | 34 |  9
   Heavily |    78 | 22 |  6
  Backbone |    34 | 10 |  2
```

# OpenMP/Threads with >8ppn

- Users running >8ppn
  - 388
- Of those, how many chose OpenMP and/or Threads
  - 230 (Including confused)
  - 175 (Excluding confused)
- Of the 388, how many chose neither OpenMP nor Threads
  - 158

# Do users of larger systems care more about Parallel I/O?

```
           | 1-16|17-64| 65-512| 513-2048| >2048| donno| count|%T
-----------+-----+-----+-------+---------+------+------+------+--
Not at all | 148 | 158 |   142 |      67 |   44 |    5 |  314 |22
 Trivially |  37 |  54 |    59 |      28 |   16 |    0 |  107 | 8
Moderately |  73 |  73 |    89 |      43 |   35 |    2 |  180 |13
   Heavily |  54 |  60 |    60 |      40 |   35 |    1 |  129 | 9
  Backbone |  16 |  15 |    16 |      12 |   14 |    1 |   36 | 3
     blank | 144 | 135 |   100 |      34 |   30 | 2  9 |  635 |45
```

# Who uses C++ bindings?

- 1 (Not Familiar), 2 (basic), 3 (good), 4 (deep), 5 (expert)

```
Population: 165 of 1401
           | 1 | 2  | 3  | 4  | 5 | null | count | %R | %T
-----------+---+----+----+----+---+------+-------+----+-----
  MPI User | 0 | 15 |  7 |  1 | 2 |    0 |    25 | 15 |  2
 App Devel | 1 | 12 | 21 |  9 | 0 |    0 |    43 | 26 |  3
Middleware | 0 |  2 |  5 |  6 | 0 |    0 |    13 |  8 |  1
Implementer| 0 |  1 |  2 |  6 | 0 |    0 |     9 |  5 |  1
  Academic | 0 | 15 | 24 | 11 | 2 |    0 |    52 | 32 |  4
   Student | 0 |  6 |  9 |  1 | 0 |    0 |    16 | 10 |  1
Management | 0 |  1 |  1 |  0 | 2 |    0 |     4 |  2 |  0
     Other | 0 |  1 |  0 |  2 | 0 |    0 |     3 |  2 |  0
```

- No obvious grouping
- Small – but nonzero populations in several areas

# Compare ‘one sided’ importance to Performance vs. Functionality RMA Q.

```
1 = Strongly Disagree (Functionality)
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly Agree    (Performance  )
           | 1 | 2  |  3  | 4  | 5  | blank| count  | %T
-----------+---+----+-----+----+----+------+-------+----
      None | 8 | 28 | 112 | 54 | 27 |  147 |   376 | 27
 Trivially | 2 |  9 |  50 | 32 | 16 |   45 |   154 | 11
Moderately | 1 | 16 |  32 | 42 | 16 |   51 |   158 | 11
   Heavily | 0 |  3 |   6 | 16 |  8 |    6 |    39 |  3
  Backbone | 1 |  2 |   5 |  7 |  2 |    2 |    19 |  1
     blank | 1 |  1 |  40 |  9 |  2 |  602 |   655 | 47
```

one-sided

- Peaks at columns 3 and 4
- Of heavy users, only slight lean to performance

# *Same* for only ARMCI/Global Arrays

one-sided

```
1 = Strongly Disagree (Functionality)
2 = Disagree
3 = Undecided
4 = Agree
5 = Strongly Agree    (Performance  )
           | 1 | 2  |  3 | 4  | 5  | blank | count | %R | %T
-----------+---+----+----+----+----+-------+-------+----+----
Not at all | 2 |  5 |  9 |  3 |  6 |     11 |      36 | 34 |  3
 Trivially | 0 |  2 |  9 |  4 |  2 |      7 |      24 | 22 |  2
Moderately | 1 |  1 |  5 |  5 |  2 |      8 |      22 | 21 |  2
   Heavily | 0 |  1 |  1 |  5 |  4 |      0 |      11 | 10 |  1
  Backbone | 1 |  1 |  1 |  2 |  0 |      0 |       5 |  5 |  0
     blank | 0 |  0 |  2 |  2 |  0 |      5 |       9 |  8 |  1
```

- Data requested by ARMCI Community

# Compare ‘Run-time Performance’ to Nonblocking Collectives (NBC)

```
1   = Most Important
2-5 = ...
6   = Least Important        Nonblocking Collective (NBC)
          |blank|  1  | 2  | 3  | 4  | 5  | 6  | null | total|%T
----------+-----+-----+----+----+----+----+----+------+------+--
 blank    |  96 |   5 |  1 |  2 |  1 |  0 |  0 |    0 |   105| 7
 1 (Most) |  40 | 152 | 68 | 50 | 40 | 30 | 17 |    0 |   397|28
 2        |  27 |  58 | 48 | 36 | 23 |  9 |  5 |    0 |   206|14
 3        |  13 |  21 | 11 | 24 | 15 |  4 |  1 |    0 |    89| 6
 4        |   2 |   6 |  6 |  6 |  3 |  1 |  3 |    0 |    27| 2
 5 (Least)|   3 |   1 |  1 |  2 |  4 |  1 |  2 |    0 |    14| 1
          |   0 |   0 |  0 |  0 |  0 |  0 |  0 |  563 |   563|40
 Total    | 181 | 243 |135 |120 | 86 | 45 | 28 |  563 |
 %T       |  13 |  17 | 10 |  9 |  6 |  3 |  2 |   40 |
```

Run-time Performance

- Those that value NBC also value performance

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# Compare ‘Feature-rich API’ to NBC

Feature-Rich API

```
1    = Most Important
2-5  = ...
6    = Least Important      Nonblocking Collective (NBC)
          | blank | 1  | 2  | 3  | 4  | 5  | 6  | null |total| %T
----------+-------+----+----+----+----+----+----+------+-----+---
 blank    |   123 | 19 |  8 |  9 |  1 |  1 |  1 |    0 | 162 | 12
 1 (Most) |     3 |  1 |  3 |  4 |  0 |  1 |  2 |    0 |  14 |  1
 2        |     1 | 16 |  7 |  8 |  4 |  0 |  2 |    0 |  38 |  3
 3        |     1 | 26 | 16 | 14 |  8 |  2 |  3 |    0 |  70 |  5
 4        |    28 | 98 | 46 | 47 | 38 | 18 |  8 |    0 | 283 | 20
 5 (Least)|    25 | 83 | 55 | 38 | 35 | 23 | 12 |    0 | 271 | 19
          |     0 |  0 |  0 |  0 |  0 |  0 |  0 |  563 | 563 | 40
 Total    |   181 |243 |135 |120 | 86 | 45 | 28 |  563 |
 %T       |    13 | 17 | 10 |  9 |  6 |  3 |  2 |   40 |
```

- Our interpretation: positive response for NBC, respondents seem to view it as a performance API not just a new feature API

# Compare NBC to {Perf., Feature-rich API}

- Those who want NBC:
  - Value run-time performance highly
  - Do not value a feature-rich API as highly
- Our Interpretation:
  - View NBC as a performance enhancement instead of just a new API
    - Users will assume that NBC will perform well
    - Users will assume that NBC implementation will provide overlap

# Questions for the MPI Forum

# Distribution of interpretation and data

- These slides will be made available publicly
  - It is unlikely that we will turn this into a written report
- Additional analysis is ongoing
  - E.g., we have not yet analyzed the text answers (there's a LOT!)
- Raw data from the survey will be publicly available
  - We want (and encourage) others to analyze it
  - Numeric data will be available shortly
  - Textual data must be "cleaned" of personally identifiable information first (this will take some time)
- Look for link to the data on the MPI Forum wiki site
  - https://svn.mpi-forum.org/trac/mpi-forum-web/wiki