RFE Questionnaire Results

Jez Tucker, Group Chair

Claire Robson, Group Secretary

Foreword

The GPFS User Group was formed in the UK in November 2010 with the aims:

- Provide a 'localised' community for support and knowledge sharing
- Empower the GPFS community to use the product to its fullest potential
- Provide a centralised mechanism for development feedback
- Raise awareness of GPFS as a capable data management platform

Users meet to discuss relevant GPFS related topics and hear the latest product updates from key GPFS speakers. The User Group has over 200 members with representatives from a variety of industries including academia, media, defence, automotive, research and finance.

At the 10th meeting of the group in April 2014 users were asked to rate their their importance to a series of Request For Enhancement (RFE) questions generated from discussion points at previous meetings and through the GPFS User Group mailing list; from very unimportant to very important.

Of 92 attendees, 32 feedback forms were completed and returned.

Each attendee did not have to answer all questions, therefore some questions have a reduced number of responses.

The responses have been compiled anonymously and are presented in the following section.

In addition the RFE questions have been entered into the RFE portal for users to additionally vote on. RFE items were entered with the priority represented via the results returned. An IBM RFE URL follows each question.

This document has been shared with IBM GPFS Development as part of the aim of providing feedback and interaction between IBM and the Users.

On behalf of the User Group,

Jez Tucker & Claire Robson

Compiled Results of RFE Questions

Q1 Cache control via runtime policy engine
If caching could be controlled by the policy engine, the user could intelligently control that valuable resource with respect to their known workloads / data types. Example:

NO_CACHE WHERE NAME LIKE %.bigfile (never cache any files of type bigfile)
PIN_TO_CACHE WHERE PATH_NAME = '/path/to/my/data/%'   (never expire this file from cache)
PRELOAD_TO_CACHE WHERE NAME = '/path/file.data, /path/file2'   (load these files entirely into cache)
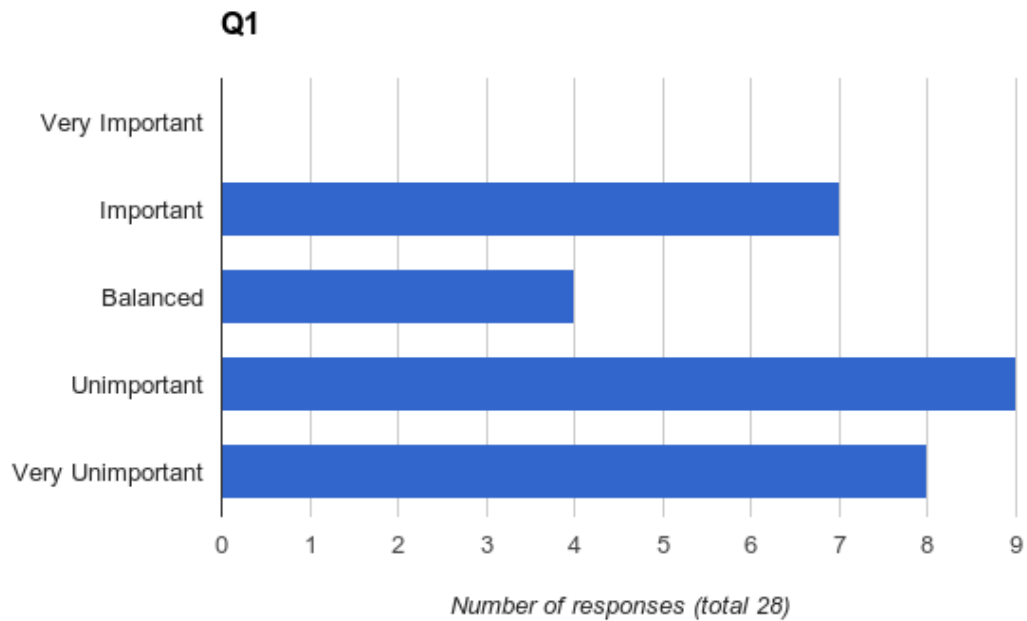
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56765

Q2 Ability to see what is in the cache
mmlscache gives directory, file, size/blocks, % used of cache, cache hits, last access time etc. -Y option

Q2

Number of responses (total 32)
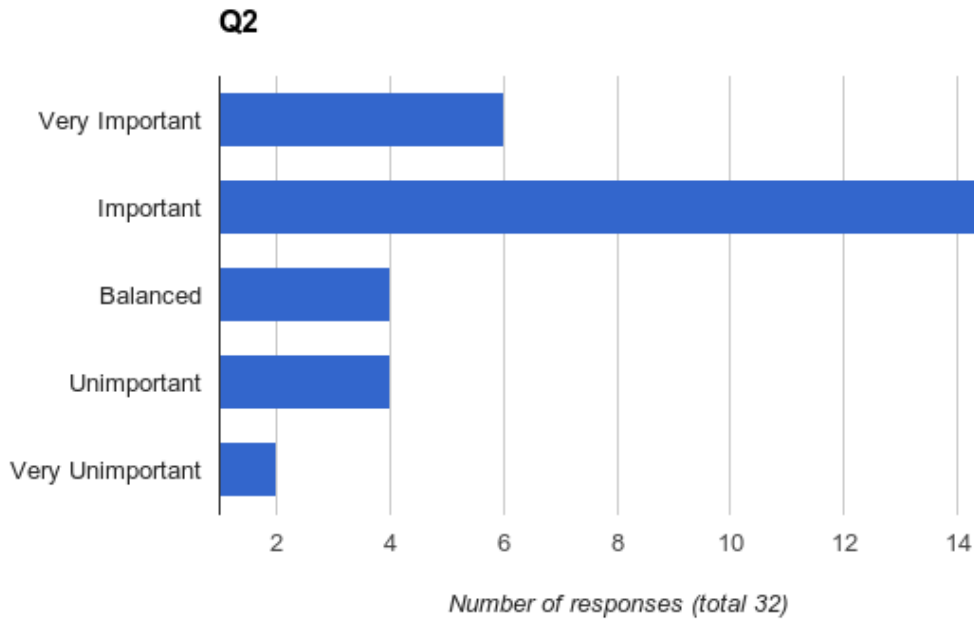
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56766

Q3 Ability to flush / clear the cache (not to disk)
The cache on a node should be able to be cleared without unmounting and remounting the file system

Q3

Number of responses (total 31)
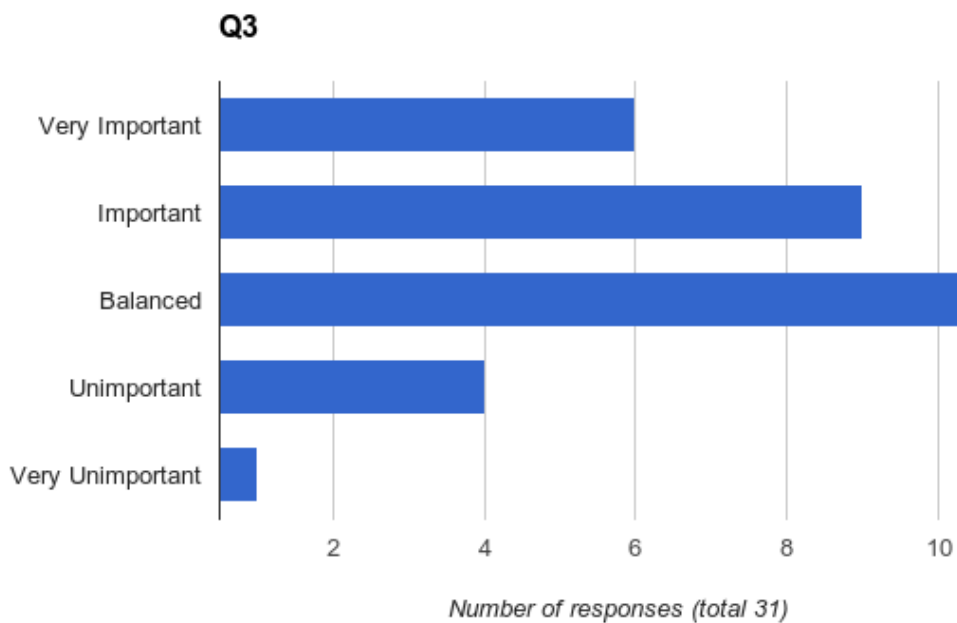
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56767

Q4 Globally accessible and coherent cache
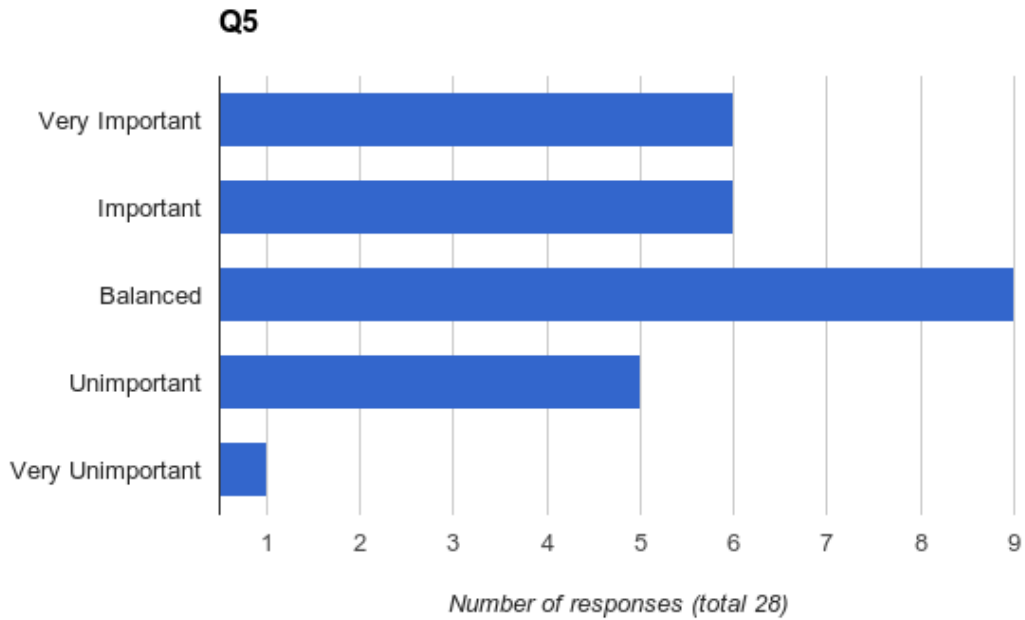A cached block is cached on all nodes and hence accessible from all nodes.

Globally coherent cache would give a performance advantage to multiple nodes performing the same task. If a file is cached on one node, then other client nodes reading the same file would not have to take a cache hit. Similarly, multiple blocks could be read in parallel from all nodes where the file is globally cached.
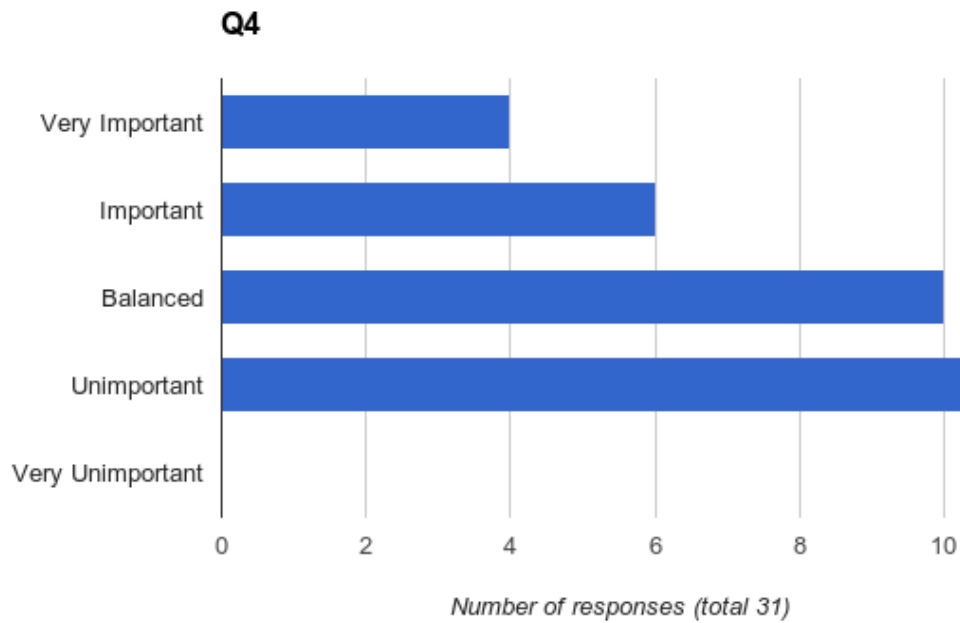
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56769

Q5 mmfsck -P poolname

Checking a file system with multiple pools means results in a check of the entire metadata for the file system when each pool is checked. Not optimal. Check individual pools instead.
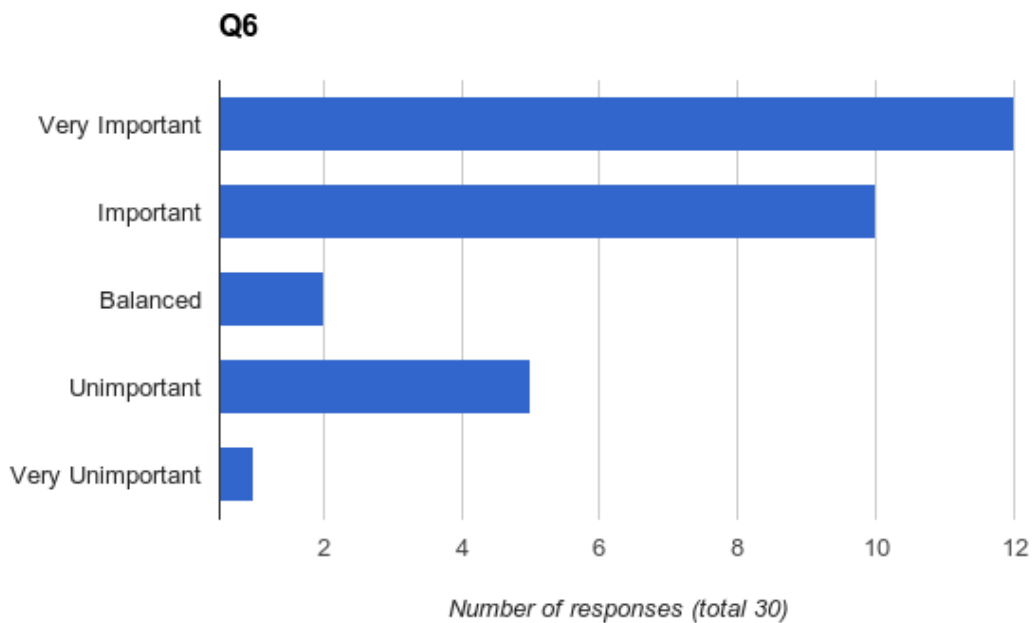
Q5

	Number of responses (total 28)
Very Important	6
Important	6
Balanced	9
Unimportant	5
Very Unimportant	1

Number of responses (total 28)

RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56769

Q6 Pool placement on path

Ability to place data into a pool based on the directory location of the data. Example:

RULE 'example' SET POOL 'fastpool' WHERE PATH_NAME LIKE '%/fastdata/%'

Q6

	Number of responses (total 30)
Very Important	12
Important	10
Balanced	2
Unimportant	5
Very Unimportant	1

Number of responses (total 30)

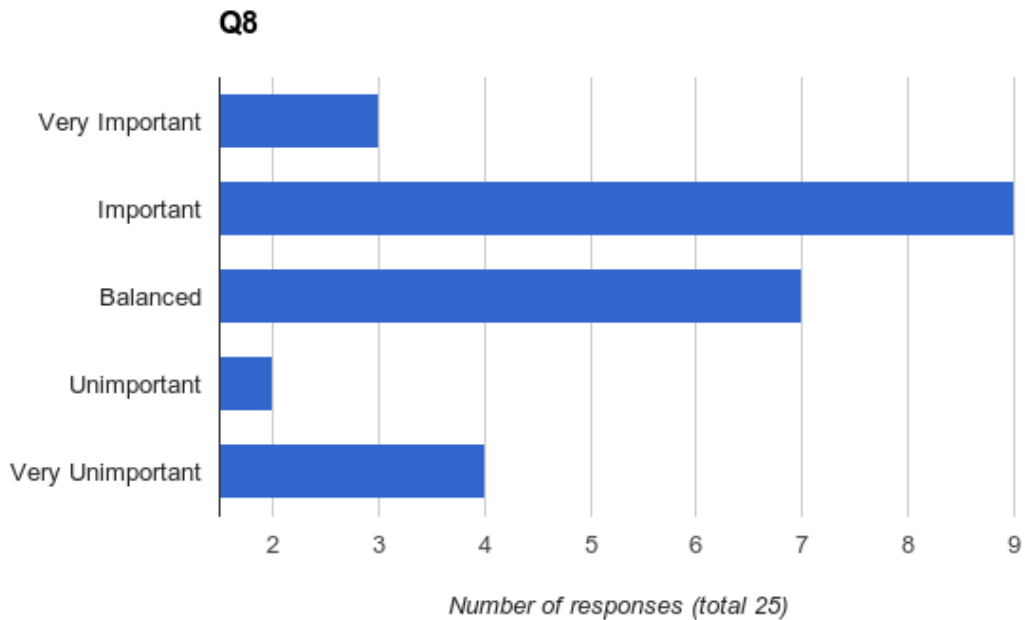RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56769

Q7 Use the running policy engine to SetXattr for all files and folders under a PATH_NAME
Ability to automatically tag the Xattr of data with defined attributes such as a project name

Q7

Number of responses (total 28)
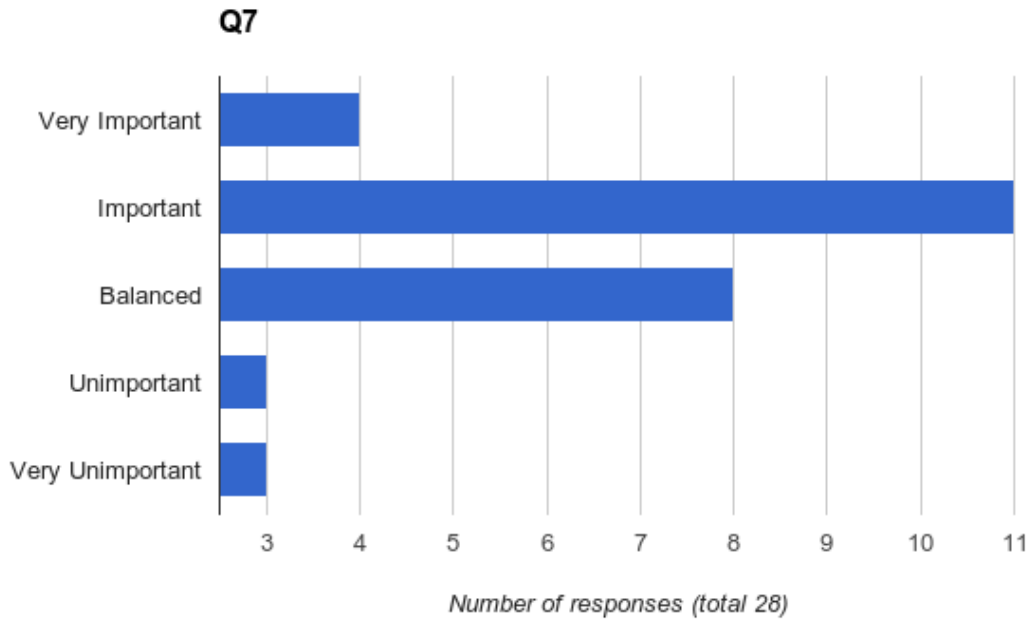
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56772

Q8 AFM queue control
Complete control over the order of each prefetch (analogy: priority WAN transfer queue for GPFS)

Q8

Number of responses (total 25)

RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56772

Q9 SNMP 64 bit counters + CIM support

Proper 64 bit counters. Obtaining correct SNMP values (E.G. for pool sizes) is not as simple as it should be.

Q9

Number of responses (total 27)
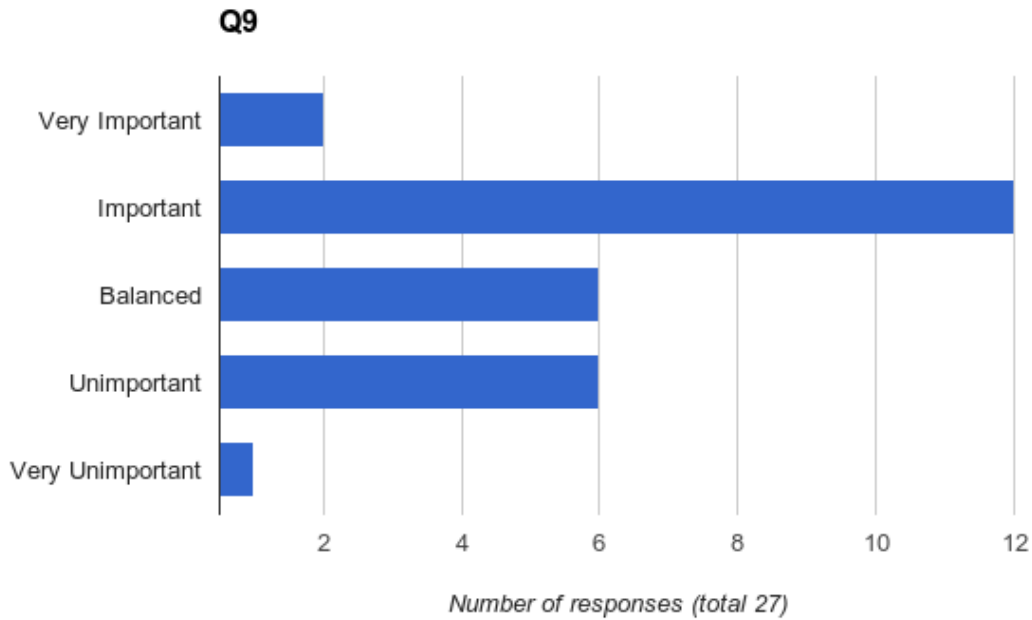
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56774

Q10 Metablocks to require less context switching (I.E. increased performance)

At small (64k) block size there's too much overhead / load / cpu / context switches

Q10

Number of responses (total 26)
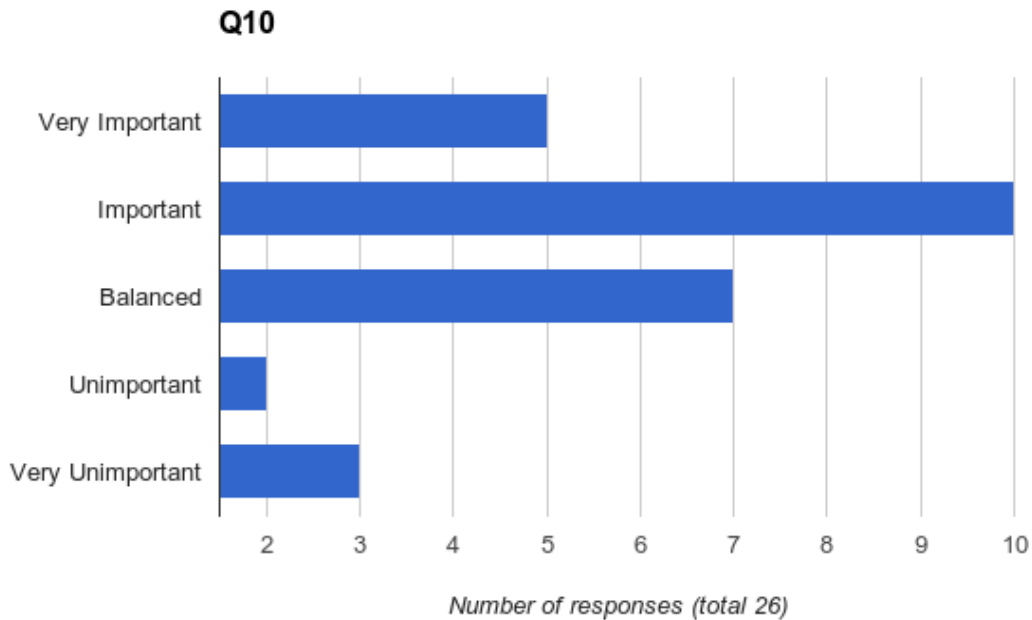
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56775

Q11 Multiple block sizes at the pool level.
Pools could be configured with different block sizes (not metablocks) based on workload requirement.

Q11

Response	
Very Important	

Number of responses (total 29)
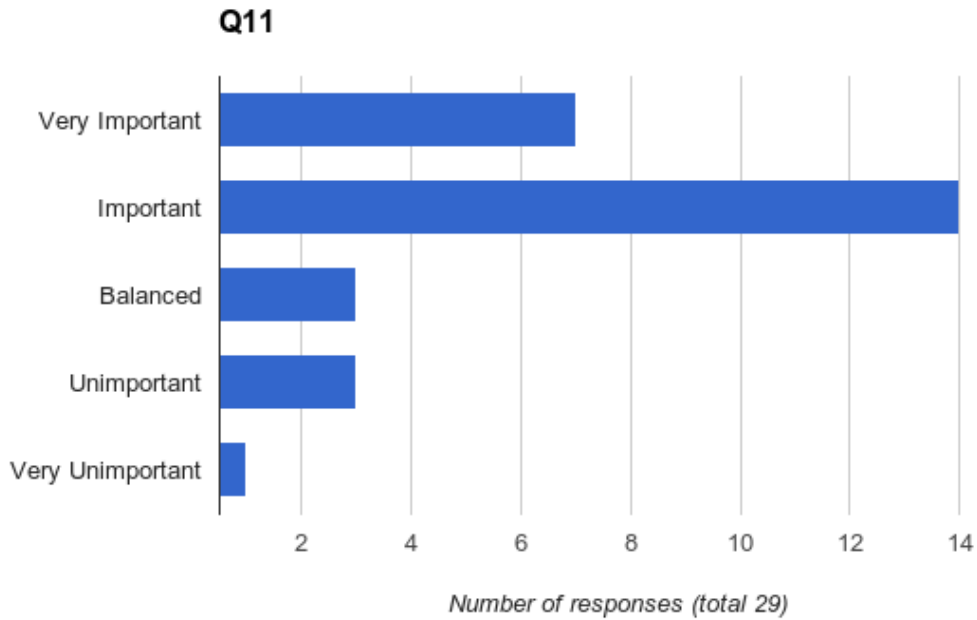
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56776

Q12 Treat all independent filesets identically to the global namespace operations
E.G. Independent filesets do not raise callbacks on lowSpace or noSpace

Q12

Number of responses (total 24)
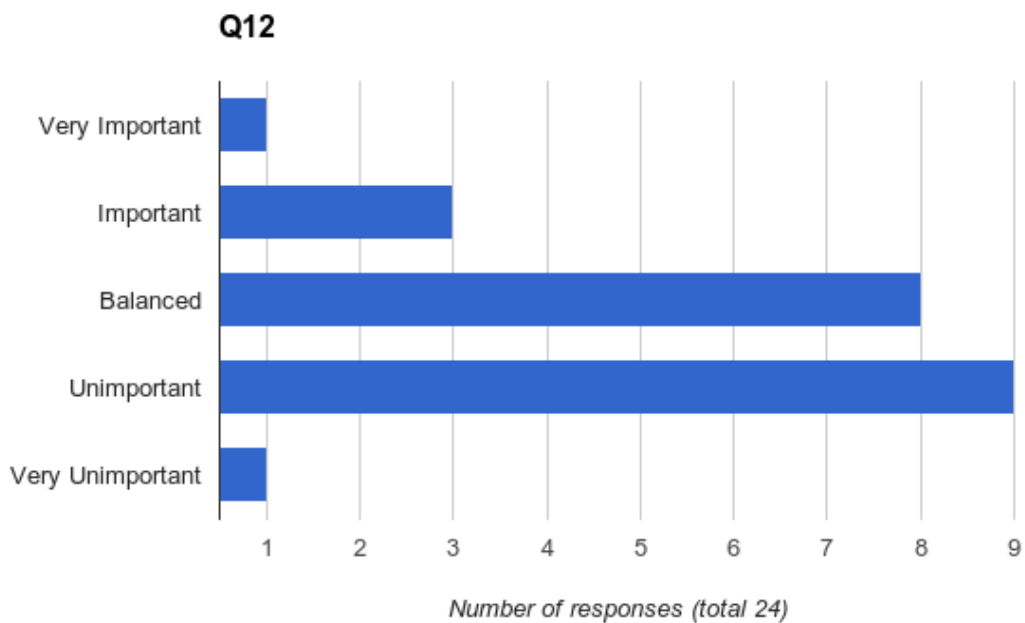
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56779

Q13 Increase the supported number of independent and dependent filesets x 10
1000 independent filesets does not offer enough granularity for AFM.

Q13

Number of responses (total 28)
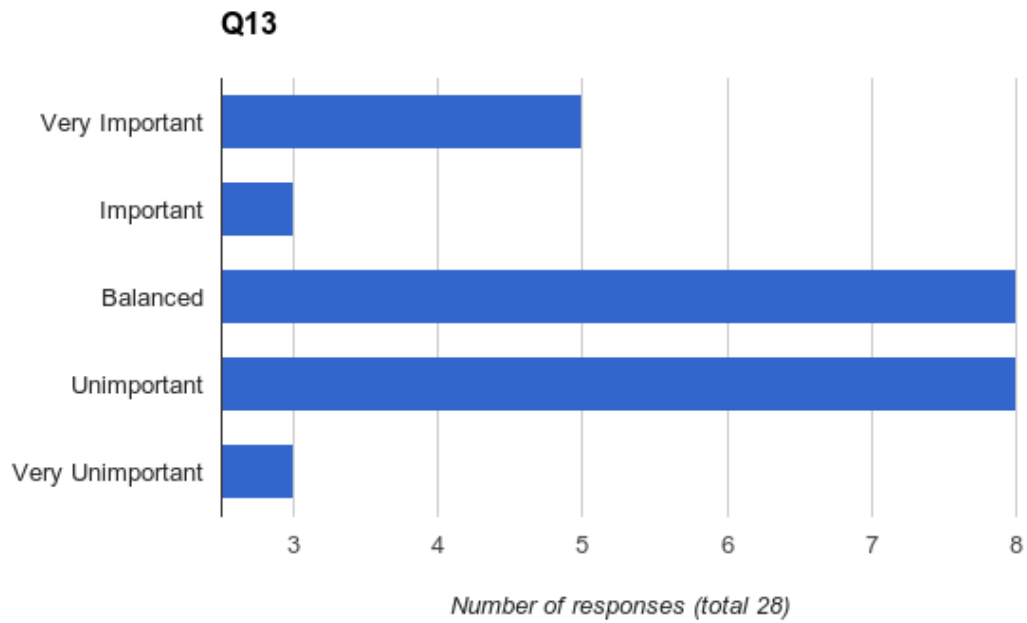
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56779

Q14 Fast approximate df for filesets
mmlsfileset df calculations are slow. A fast approximate filesetdf (alike mmlsquota) is needed.

Q14

Number of responses (total 31)
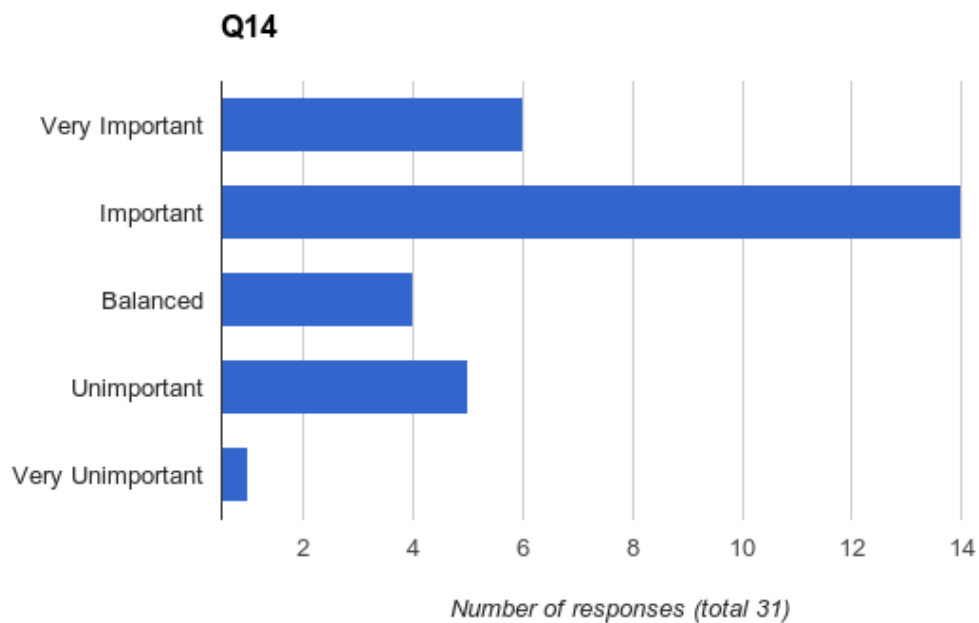
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56781

Q15 Support GPFS on Ubuntu 14.04 LTS and future LTS releases
Ubuntu is now mainstream. Support Ubuntu LTS releases in addition to Debian.
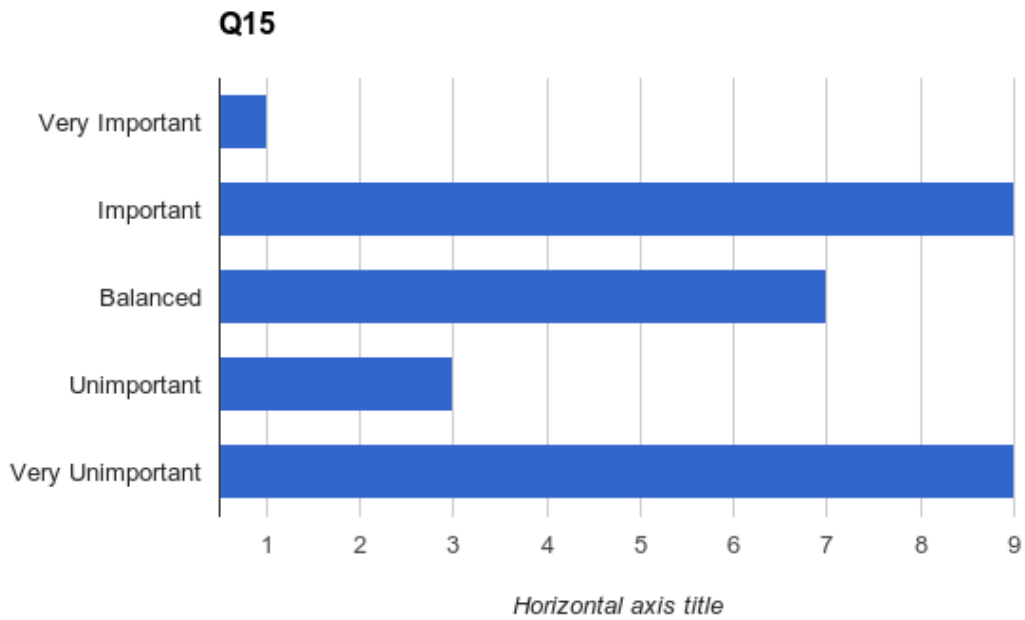
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56783

Q16 OSX 10.8+ client : GPFS protocol over IP
Performance improvements over NFS3/4 and SMB2
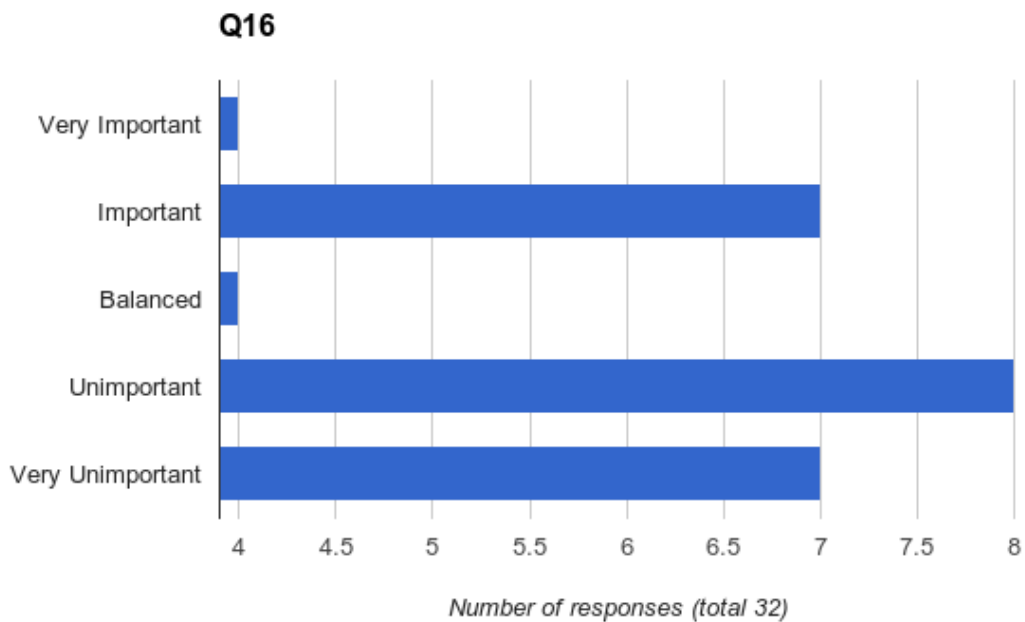
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56786

Q17 NDMP support in native GPFS
Required for supporting fast block streaming to 3rd party (non-IBM) backup applications

Q17

Number of responses (total 30)
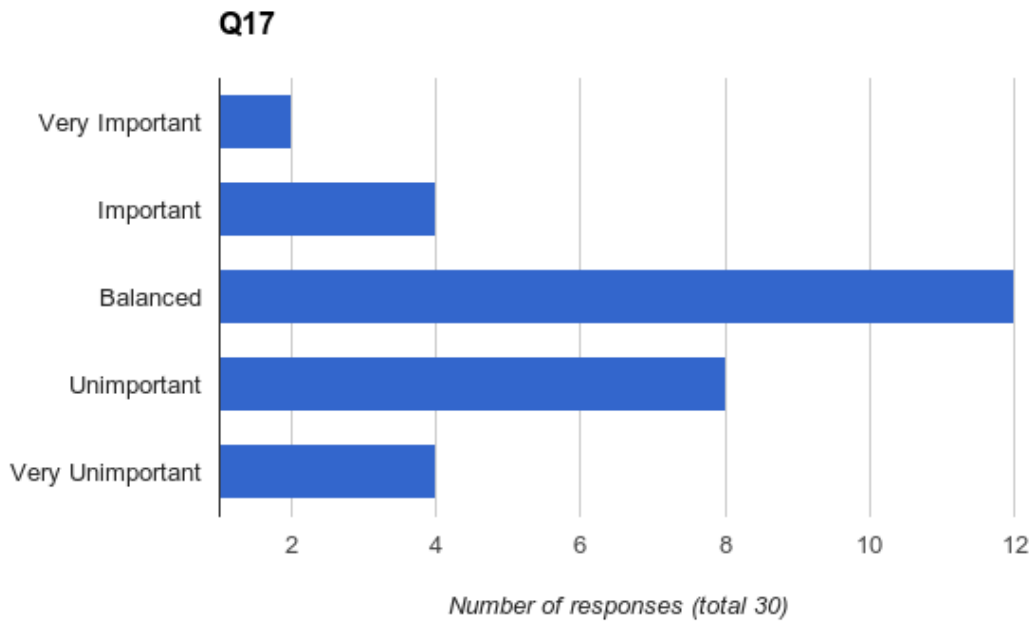
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56786

Q18 Override the sort routine within policy processing
Ability to specify extra args to sort (E.G. for natural sort for numerical sequences) or to use a user specified program to perform the sort using a different algorithm. Sort is frequently the longest stage of execution.

Q18

Number of responses (total 26)
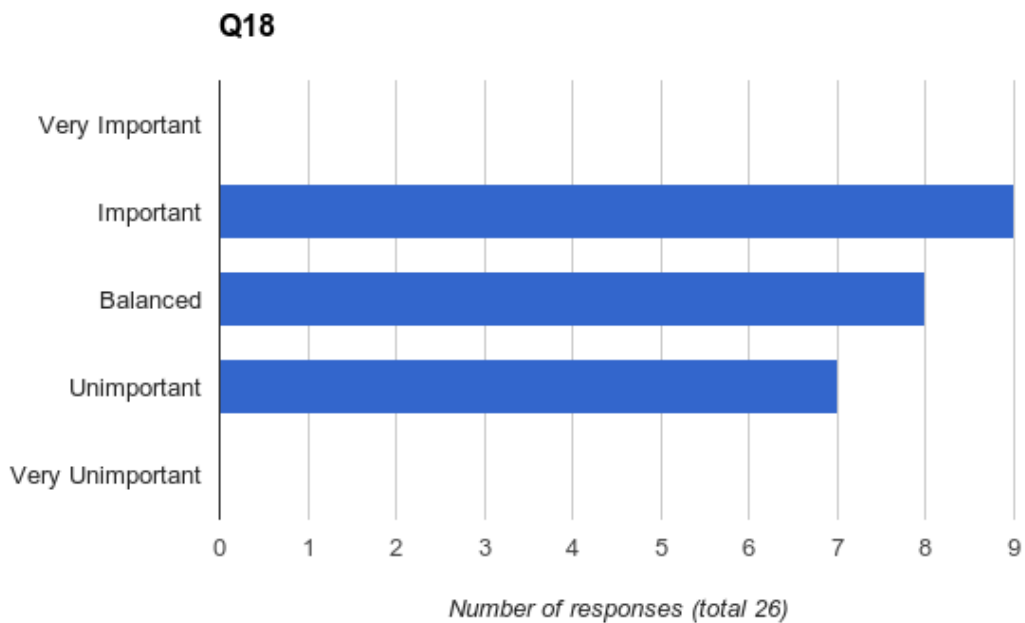
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56786

Q19 Ability to add and remove parallel threads / nodes to a currently executing policy
Allows the administrator to make decisions and changes to the performance impact of a running policy

Q19

Number of responses (total 30)
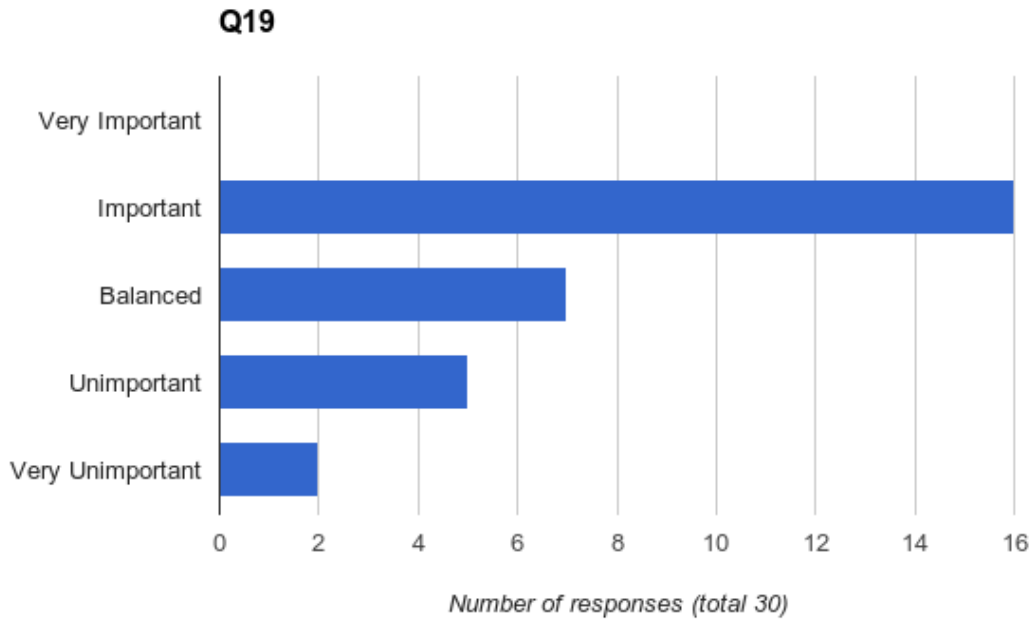
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56786

Q20 Mirror snapshots to another cluster as a destination snapshot
Ability to mirror a snapshot to a remote cluster. The source snapshot would appear as a snapshot on the remote cluster, not as live data.

Q20

Number of responses (total 31)
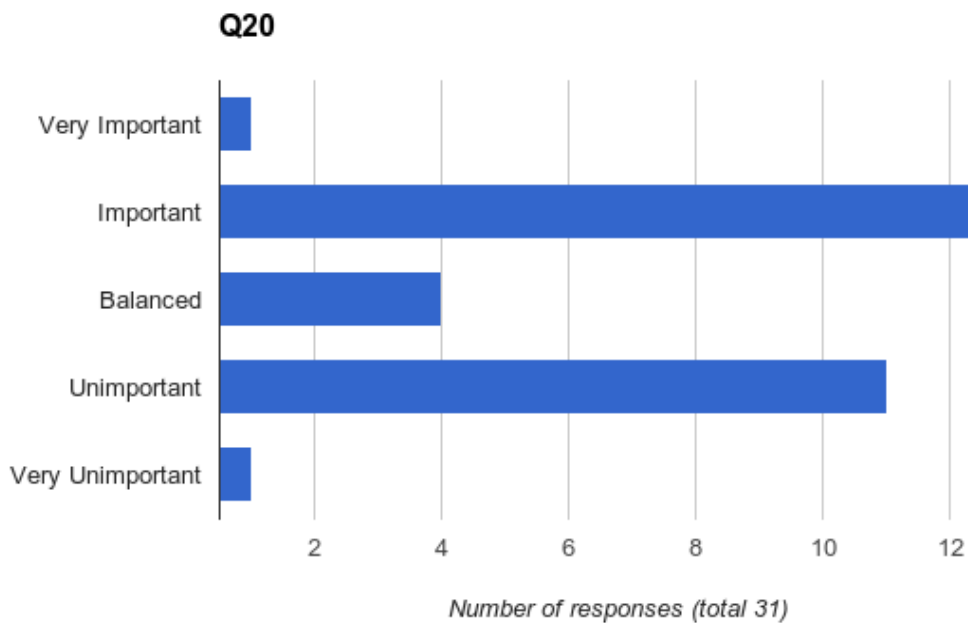
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56791

Q21 Option to mount the file system with the root being as a subdirectory

NFS clients can mount /gpfs/mydata as /mydata. GPFS clients would mount /gpfs with a subdir of mydata. Ideally selected GPFS clients could mount /gpfs/mydata as /mydata without the use of symlinks.

Q21

Number of responses (total 31)
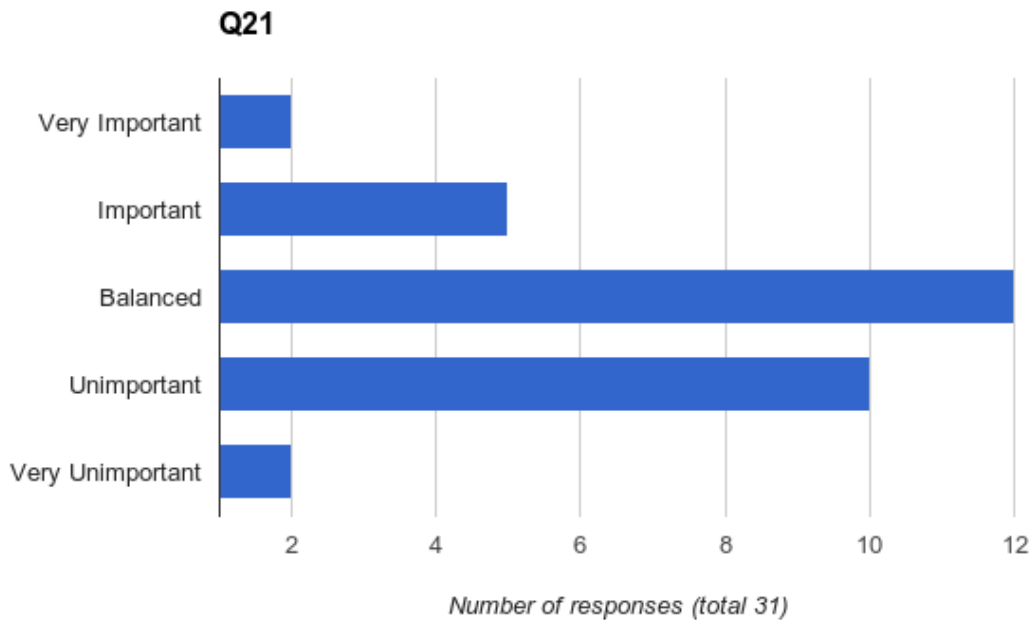
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56792

Q22 Make GPFS more atomic

At present you cannot delete or create snapshots or filesets if a migration is occurring.

Q22

Number of responses (total 26)
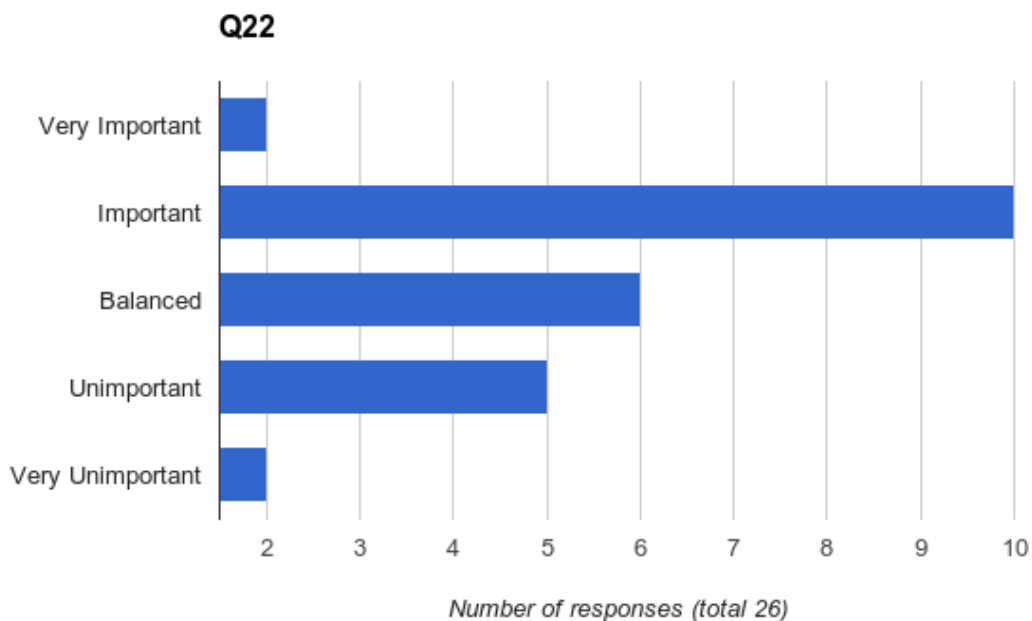
RFE URL: http://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=56793

Summary

Firstly, we extend our thanks to our members and the IBM GPFS team for the support and level of engagement at User Group 10.

This involvement enabled the User Group to collate data and personalised feedback from entirely relevant, cross industry parties at all levels of experience.

Users can use the RFE URLs in this document to vote for the RFEs covered - or submit additional RFEs, informing the User Group of their creation via the mailing list.

We welcome all constructive feedback and actively encourage Users and IBM alike to engage and debate at all possible levels for the furtherment of GPFS.

Anonymised Raw Data

Sector	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22
N/A (anon)		3	1	3	3	1	2	5	1	2	5	5	5	2	5	5	5	5	2	5	5	2
Academia														4	5	5						
Academia	2	2	3	4	3	2	2	4	3	2	2	5	5	2	5	5	4	5	4	2	4	5
Research	2	3	3	4	2	5	2	3	2	2	4	4	4	2	3	4	3	2	2	2	2	3
Academia	3	2	2	3	3	2	3	2	2	3	2	3	4	3	2	2	3	4	3	2	4	5
Academia	4	2	1	3		4	5		2	5	5	5	5	2	5	5	5	3	2	5	5	3
Research	3	2	2	3	4	4	4	5	2	2	2	3	3	1	3	2	3	3	2	3	3	2
Storage Vendor	1	2	2	1	3	1	3	2	2	3	1	3	1	2	2	1	1	2	3	2	2	2
Solution Provider	1	1	3	3	3	1	5				1	2	3	3	5	5	3	3	2	2	3	3
Media	3	2	3	2	2	2	2	5	2	1	2	3	4	2	2	1	2	2	3	2	3	2
Media	2	2	2	3	2	1	3	2	4	4	3	3	3	1	5	3	1	3	2	2	3	3
Media	1	2	1	4		1	2	2	3	3	2	4	5		2	2	5				4	4
Solution Provider	2	2	4	4	4	2	2	2	2	4	2	4	4	4	2	5	3	4		4	2	4
Solution Provider	1	1	2	2	1	1	5	3	5	2	2	4	2	5	5	4			4	3	4	
IBM	2	1	1	2	1	1	1	3	3	3	1		3	1	4	2	4	2	2	4	4	2
Storage Vendor	1	3	2	4	2	1	1	3	4	3	1	2	4	2	2	2	3	3	2	4	3	2
Government	1	1	2	1	1	1	1	1	2	1	1	1	2	1	4	5	3	2	2	2	2	1
Research	4	5	3	3	5	4	3	5	3	3	4	4	3	4	3	2	2	4	5	4	4	5
Research	1	1	1	2	1	1	1	2	1		1	4	4	4	3	4	4	2	5	4	3	
Academia		2		1	3	2	2	2	2		2			2	4	4	2	4	3	2	4	2
Academia	4	2	5	4	1	3	4	3	2	1	1	4	1	3	2	4	3	4	2	2	2	1
Research		3	3	3		1	2	5	2		2		1	2	5	5	3	2	2	3	3	
Research	1	2	3	3	2	1	3	1	3	2	2		4	2	5	5	5		3	2	4	4
Finance	2	2	4	1						1				3	5	4	4	3	2	3	3	2
Research	2	1	2	3	3	2	3	1		1	2	4	4	1	5	1	3	2	3	4	1	3
Academia																						
Finance	4	3	3	3	3	2	3	2	4	2	2		3	2	5	3	5	3	2	2	3	2
Academia	2	2	4	4	4	4	2	2	4	2	3	3	3	1	2	3	4	4	4	4	4	4
Academia		2	3	2	2	2			2	2	2	3		2	3	3	3		2	4	3	
N/A (anon)	2	4	3	2	1					1				2	2	1			2	2		
Distributor	4	5	2	4	4	2	3	3	4	5	4	3	1	4	3	4	3	3	4	4	3	3
Academia	3	4	1	4	4	2	2	4	3	2	2	4	2	2	1	5	4	2	3	4	3	4
N/A (anon)	4	4	3	4	3	4	2	5	2	3	3	2	1	2	3	2	2	4	2	1	1	2
Academia	4	4	4		3	3			4				3	4			4			4	4	