OpenSFS Survey March 2018 Results

Background

A survey was developed and finalized during LWG meetings early in 2018. The intention was to collect information about Lustre usage across the community as input into the OpenSFS long-term support strategy.

Key Findings

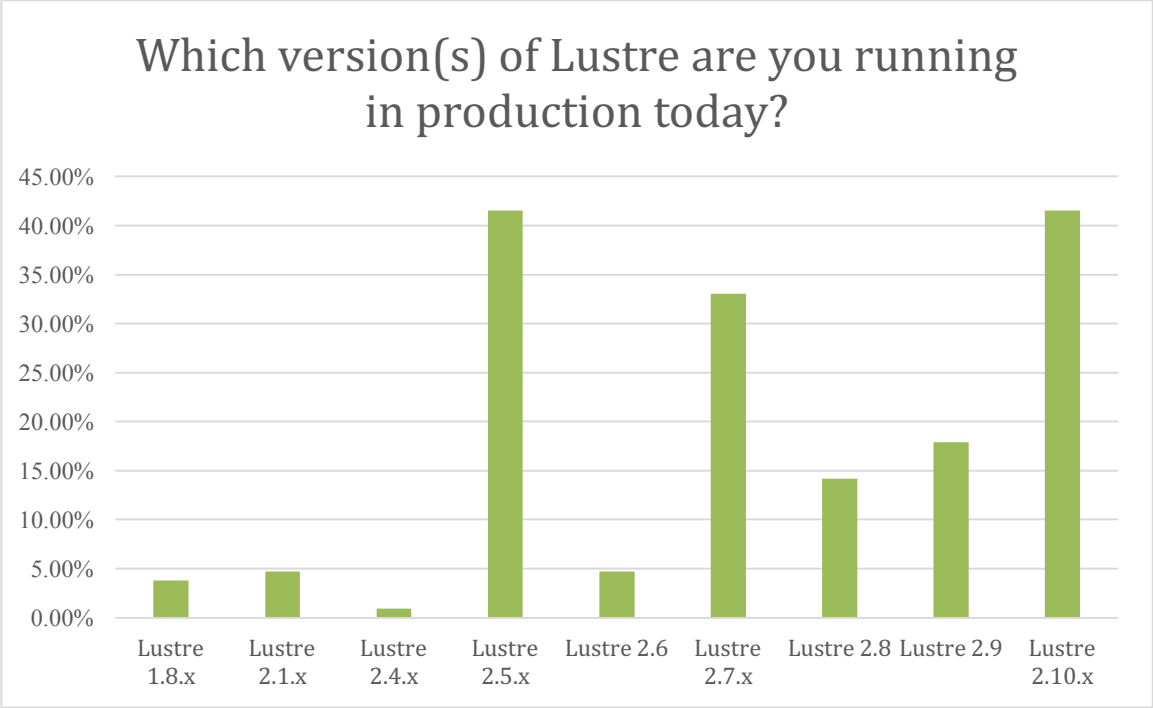
- 110 respondents completed the survey compared to 70 in 2017, 97 in 2016, 89 in 2015, 76 in 2014, 73 in 2013 and 90 in 2012
- There has been strong adoption of Lustre 2.10.x LTS releases and these are the most widely used releases in production along with Lustre 2.5.x releases
- Genomics/Life Sciences, Energy and AI/Machine Learning are the most common usages for Lustre

Detailed Findings

1. Which version(s) of Lustre are you running in production today?

This question allowed multiple selections so the sum can exceed the total number of respondents.

Which version(s) of Lustre are you running in production today?		
Answer Options	**Response Percent**	**Response Count**
Lustre 1.8.x	3.77%	4
Lustre 2.1.x	4.72%	5
Lustre 2.4.x	0.94%	1
Lustre 2.5.x	41.51%	44
Lustre 2.6	4.72%	5
Lustre 2.7.x	33.02%	35
Lustre 2.8	14.15%	15
Lustre 2.9	17.92%	19
Lustre 2.10.x	41.51%	44
	answered question	**106**
	skipped question	**4**



2. What Linux distribution(s) do you use?

This question allowed multiple selections so the sum can exceed the total number of respondents.

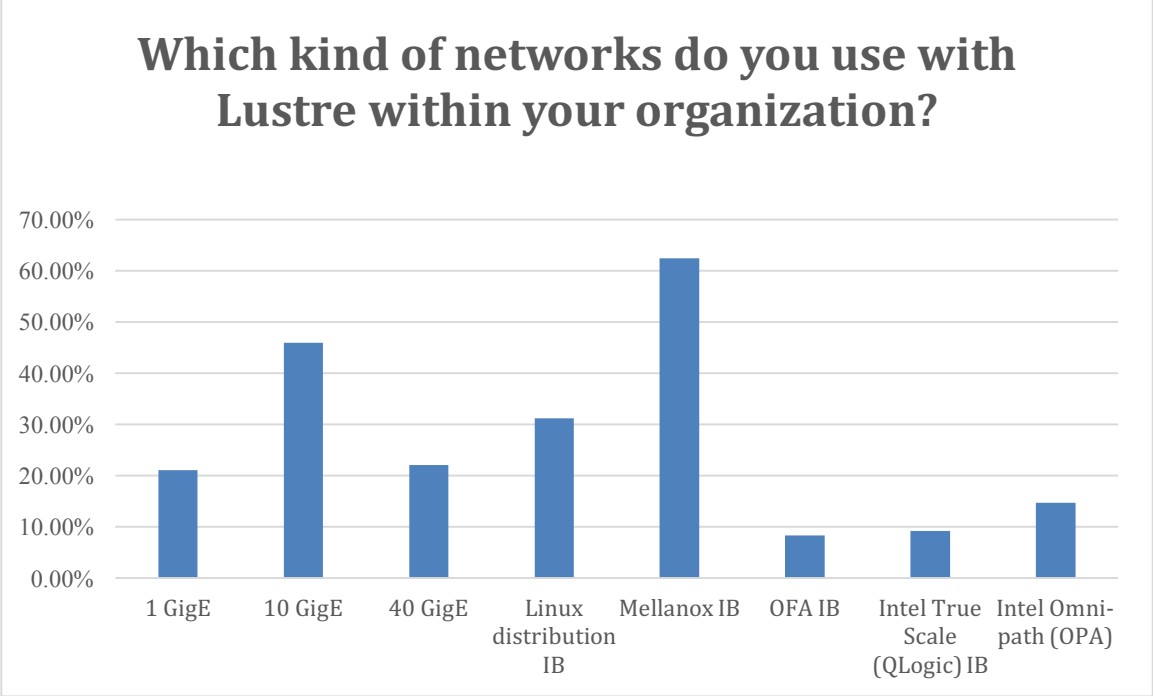
Distro	Servers #	Servers %	Clients #	Clients %
RHEL/CentOS 5.x	4	3.77%	5	4.72%
RHEL/CentOS 6.x	72	67.92%	59	55.66%
RHEL/CentOS 7.x	76	71.70%	75	70.75%
SLES 11 SPx	8	7.55%	13	12.26%
SLES 12 SPx	6	5.66%	11	10.38%
Ubuntu 14.04	0	0%	3	2.83%
Ubuntu 16.04	0	0%	4	3.77%

Other options indicated –2 Debian, 1 Fedora. 109 completed this question, 1 respondent skipped it.

3. Which kind of networks do you use with Lustre within your organization?

This question allowed multiple selections so the sum can exceed the total number of respondents.

Answer Options	Response Percent	Response Count
1 GigE	21.10%	23
10 GigE	45.87%	50
40 GigE	22.02%	24
Linux distribution IB	31.19%	34
Mellanox IB	62.39%	68
OFA IB	8.26%	9
Intel True Scale (QLogic) IB	9.17%	10
Intel Omni-path (OPA)	14.68%	16
	answered question	109
	skipped question	1



4. What best describes your level of interest in the following recent Lustre features?

Answer Options	Use in production	Will use within year	Testing /Evaluating	Feature not ready yet	May use in future	No interest	Response Count
Data on MDT	8	20	12	12	44	5	101
DNE (Remote	20	12	9	2	39	8	90

Directories)							
DNE (Striped Directories)	10	12	15	5	40	7	89
File Level Redundancy	7	6	14	9	48	8	92
HSM	11	12	16	5	38	16	98
IML	15	10	11	2	31	22	91
LFSCK (lctl)	36	11	14	2	24	6	93
Multi-Rail LNet	10	11	15	2	43	14	95
Progressive File Layouts	5	20	19	5	39	5	93
Project Quotas	11	32	16	6	26	7	98
ZFS	40	8	14	3	29	6	100
						answered question	**110**
						skipped question	**0**

5. Which feature(s) would you like to see in upcoming versions of Lustre?

This question permitted free text answers and there was great diversity in the answers. The most popular suggestions had eight respondents interested and was for Data on MDT (which is confirmed as in the 2.11 release). There were also many requests for features that are already in the most current versions of Lustre perhaps indicative that the respondents are working with vendors who work with an older version without these capabilities.

47 respondents skipped this question

6. Which organization do you represent?

89 Answered this question; 21 skipped it.

7. Which category best describes your organization's usage of Lustre?

This question allowed multiple selections so the sum can exceed the total number of respondents.

Answer Options	Response Percent	Response Count
AI/Machine Learning	22.02%	24
Education	38.53%	42
Defense	3.67%	4
Energy	22.02%	24
Financial Services	4.59%	5
Genomics/Life Sciences	33.03%	36
Government	23.85%	26

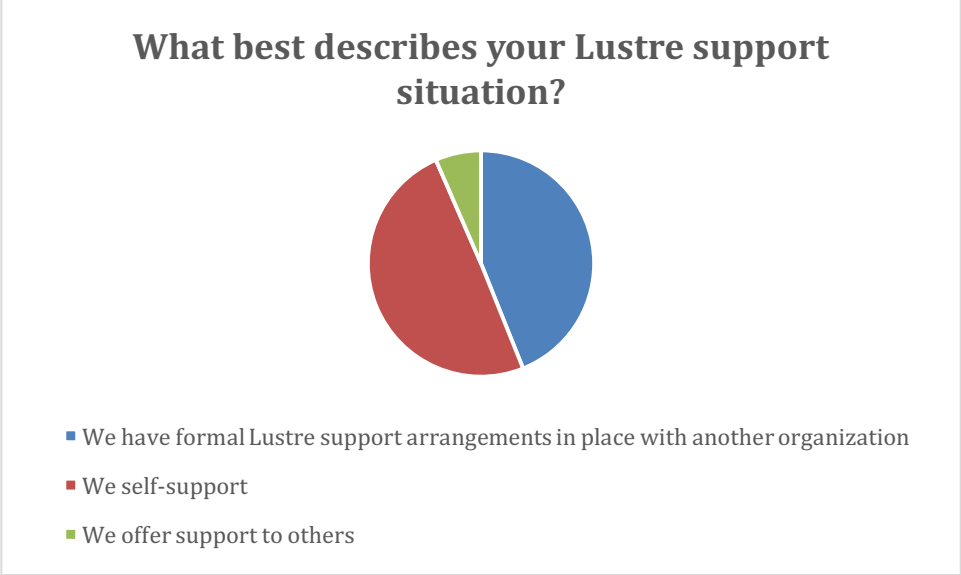
Manufacturing	13.76%	15
Media/Entertainment	1.83%	2
Meteorology	18.35%	20
Storage Vendor/Integrator	12.84%	14
Other	19.27%	21
	answered question	109
	skipped question	1

The Other category suggested that there should be more research options and (ahem) particularly to particle physics research.

8. <u>What best describes your Lustre support situation?</u>

This only permitted a single selection so the sum of respondents should equal the total number of respondents.

Answer Options	Response Percent	Response Count
We have formal Lustre support arrangements in place with another organization	43.93%	47
We self-support	49.53%	53
We offer support to others	6.54%	7
	answered question	107
	skipped question	3



9. What is the total number of Lustre filesystems you have in production?

492 filesystems were declared across all respondents.

20 respondents skipped this question

10. How many of the following components do you have in your largest Lustre filesystem?

Component	Total
MDS	237
MDT (ldiskfs)	168
MDT(ZFS)	99
OSS	4.432
OST (ldiskfs)	13,357
OST (ZFS)	2,889
Client	242,486
LNET Router	2,496

12 respondents skipped this question.