Revisiting the notion of Mach

High-Rate Data Acquisition, Streaming, and Processing at the EMBL PETRA III Beamlines



EMBL 🚦





GUI Middleware Servers Image Display

Hyper-threaded DELL Servers e.g. 88 cores 256 GB RAM



Dedicated **40 / 56 Gbit** InfiniBand

Network









Mach



fps: feet per second fps: frames per second

- Acquired
- Transferred
- Processed; Results Displayed
- Dumped to Disk





1118 fps

Breaking Mach 1

- ✤ Eiger 2X CdTe
- ✤ 4M ROI 8-bit mode
- ✤ P14
- ✤ November, 2021





	[tine@p15backup01 rideau]\$ zgrep "transfer speed" p14-rideau.log.2021-11-12.gz grep "11-11 16:2"
	2021-11-11 16:20:45.148, rideau: info: transfer speed: 0.000000 frames/s; frame count transferred/written: 0/0
	2021-11-11 16:20:45.752, rideau: info: transfer speed: 393.960724 frames/s; frame count transferred/written: 117/29
	2021-11-11 16:20:46.054, rideau: info: transfer speed: 712.011292 frames/s; frame count transferred/written: 357/29
	2021-11-11 16:20:46.355, rideau: info: transfer speed: 931.767212 frames/s; frame count transferred/written: 789/33
	2021-11-11 16:20:46.655, rideau: info: transfer speed: 977.948730 frames/s; frame count transferred/written: 1087/33
Mach Run	2021-11-11 16:20:46.954, rideau: info: transfer speed: 1022.609253 frames/s; frame count transferred/written: 1529/33
Maon Ivan	2021-11-11 16:20:47.255, rideau: info: transfer speed: 1039.281494 frames/s; frame count transferred/written: 1775/33
	2021-11-11 16:20:47.555, rideau: info: transfer speed: 1063.106079 frames/s: frame count transferred/written: 2190/33
	2021-11-11 16:20:47.856, rideau: info: transfer speed: 1062.850342 frames/s: frame count transferred/written: 2484/33
	2021-11-11 16:20:48.156. rideau: info: transfer speed: 1070.698364 frames/s: frame count transferred/written: 2907/35
	2021-11-11 16:20:48.458, rideau: info: transfer speed: 1079.231567 frames/s: frame count transferred/written: 3153/53
	2021-11-11 16:20:48.757, rideau: info: transfer speed: 1084.874512 frames/s: frame count transferred/written: 3569/53
	2021-11-11 16:20:49.057, rideau: info: transfer speed: 1086.361206 frames/s: frame count transferred/written: 3857/66
	2021-11-11 16:20:49.359 rideau: info: transfer speed: 1087.215820 frames/s: frame count transferred/written: 4246/85
	2021-11-11 16:20:49.658 rideau: info: transfer speed: 1090.425049 frames/s: frame count transferred/written: 4466/85
	2021-11-11 16:20:49.959, rideau: info: transfer speed: 1097.236450 frames/s: frame count transferred/written: 4930/85
	2021-11-11 16:20:50,259, rideau: info: transfer speed: 1093.519653 frames/s; frame count transferred/written: 5184/85
	2021-11-11 16:20:50 560 rideau: info: transfer speed: 1099.519055 frames/s; frame count transferred/written: 5611/85
	2021-11-11 16.20.50.860, rideau; info; transfer speed: 1009.252197 frames/s; frame count transferred/written; 5845/85
	2021-11-11 16.20.50.000, rideau: info: transfer speed: 1090.570290 ridmes/s; frame count transferred/written: 6268/127
	2021-11-11 16.20.51.101, Fideau: info: transfer speed: 1009.531000 Frames/s; frame count transferred/written: 6555/127
	2021-11-11 10.20.51.405, Fideau: info: transfer speed: 1099.570006 Hames/s, Hame count transferred/written: 6014/127
	2021-11-11 16.20.51.705, Fideau: info: transfer speed: 1090.295770 Hames/s; frame count transferred/written: 7196/127
	$2021 \cdot 11 \cdot 11 \cdot 16 \cdot 20 \cdot 52 \cdot 004$, rideau: info: transfer speed: 1102.009550 frames/s; frame count transferred/written: 7632/127
	$2021 \cdot 11 \cdot 11 \cdot 10 \cdot 20.52.504$, rideau, info, transfer speed. 1104.450064 frames/s, frame count transferred/written, $7039/127$
	$2021 \cdot 11 \cdot 11 \cdot 10 \cdot 20 \cdot 52 \cdot 005$, Fideau: info: transfer speed: 1100.881220 Frames/s; Frame count transferred/written: $908/127$
	$2021 \cdot 11 \cdot 11 \cdot 10 \cdot 20 \cdot 52 \cdot 900$, Fideau: thio: transfer speed: $1102 \cdot 700195$ frames/s; frame count transferred/written: $8151/127$
	$2021 \cdot 11 \cdot 11 \cdot 16 \cdot 20 \cdot 53 \cdot 207$, Fideau: info: transfer speed: $1107 \cdot 910992$ Frames/s; Frame count transferred/written: $8584/174$
	$2021 \cdot 11 \cdot 11 \cdot 16 \cdot 20 \cdot 53 \cdot 570$, rideau: info: transfer speed: $1003 \cdot 531010$ frames/s; frame count transferred/written: $0246/474$
	$2021 \cdot 11 \cdot 11 \cdot 16 \cdot 20 \cdot 53 \cdot 809$, rideau: info: transfer speed: $1098 \cdot 845093$ frames/s; frame count transferred/written: $9240/1/4$
	2021-11-11 16:20:54.108, Fideau: info: transfer speed: 1105.343750 Frames/s; Frame count transferred/written: 9523/203
	2021-11-11 16:20:54.408, Fideau: info: transfer speed: 1109.900372 frames/s; frame count transferred/written: 9908/203
	2021-11-11 16:20:54.768, rideau: info: transfer speed: 1108.324219 frames/s; frame count transferred/written: 10234/203
	2021-11-11 16:20:55.008, rideau: info: transfer speed: 1105.130737 frames/s; frame count transferred/written: 10617/203
	2021-11-11 16:20:55.369, rideau: info: transfer speed: 1107.940186 frames/s; frame count transferred/written: 10860/203
	2021-11-11 16:20:55.669, rideau: info: transfer speed: 1111.761353 frames/s; frame count transferred/written: 11307/203
	2021-11-11 16:20:55.970, rideau: info: transfer speed: 1107.282715 frames/s; frame count transferred/written: 11558/203
	2021-11-11 16:20:56.271, rideau: info: transfer speed: 1098.296387 frames/s; frame count transferred/written: 11805/320
	2021-11-11 16:20:56.571, rideau: info: transfer speed: 1094.589478 frames/s; frame count transferred/written: 11981/354
	2021-11-11 16:20:56.871, rideau: info: transfer speed: 1080.474365 frames/s; frame count transferred/written: 12126/374
	2021-11-11 16:20:57.171, rideau: info: transfer speed: 1060.719604 frames/s; frame count transferred/written: 12266/377
	2021-11-11 16:20:57.472, rideau: info: transfer speed: 1060.944580 frames/s; frame count transferred/written: 12368/380
	2021-11-11 16:20:57.772, rideau: info: transfer speed: 1060.908447 frames/s; frame count transferred/written: 12517/380
	2021-11-11 16:20:58.072, rideau: info: transfer speed: 1010.121948 frames/s; frame count transferred/written: 12723/475
	2021-11-11 16:20:58.373, rideau: info: transfer speed: 1004.856567 frames/s; frame count transferred/written: 12903/506
	2021-11-11 16:20:58.676, rideau: info: transfer speed: 989.795410 frames/s; frame count transferred/written: 13063/586

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	2021- 11-11	16:20:58.974,	rideau:	info:	transfer	speed:	991.003052	frames/s;	frame	count	transferred/written:	13348/764	
	2021-11-11	16:20:59.274,	rideau:	info:	transfer	speed:	993.443115	frames/s;	frame	count	transferred/written:	13632/974	
	2021-11-11	16:20:59.575,	rideau:	info:	transfer	speed:	999.205139	frames/s;	frame	count	transferred/written:	14106/1299	
	2021-11-11	16:20:59.880,	rideau:	info:	transfer	speed:	1002.173828	<pre>ß frames/s;</pre>	; frame	count	transferred/written:	14341/1417	
	2021-11-11	16:21:00.178,	rideau:	info:	transfer	speed:	994.937012	frames/s;	frame	count	transferred/written:	14624/1566	
	2021-11-11	16:21:00.479,	rideau:	info:	transfer	speed:	989.009888	frames/s;	frame	count	transferred/written:	14783/1608	
Mach Run	2021-11-11	16:21:00.779,	rideau:	info:	transfer	speed:	982.549500	frames/s;	frame	count	transferred/written:	14905/1666	
	2021-11-11	16:21:01.080,	rideau:	info:	transfer	speed:	976.558716	frames/s;	frame	count	transferred/written:	15153/1925	
/	2021-11-11	16:21:01.382,	rideau:	info:	transfer	speed:	980.599487	frames/s;	frame	count	transferred/written:	15575/2621	
	2021-11-11	16:21:01.683,	rideau:	info:	transfer	speed:	980.363525	frames/s;	frame	count	transferred/written:	15826/3184	
	2021-11-11	16:21:01.982,	rideau:	info:	transfer	speed:	982.408875	frames/s;	frame	count	transferred/written:	16191/3823	
	2021-11-11	16:21:02.284,	rideau:	info:	transfer	speed:	982.488037	frames/s;	frame	count	transferred/written:	16475/4656	
	2021-11-11	16:21:02.584,	rideau:	info:	transfer	speed:	984.599060	frames/s;	frame	count	transferred/written:	16856/5428	
	2021-11-11	16:2 1:02.882,	rideau:	info:	transfer	speed:	984.372559	frames/s;	frame	count	transferred/written:	17092/6468	
	2021-11-11	16:2 1:03.182,	rideau:	info:	transfer	speed:	987.304626	frames/s;	frame	count	transferred/written:	17481/7851	
	2021-11-11	16:2 1:03.482,	rideau:	info:	transfer	speed:	987.631592	frames/s;	frame	count	transferred/written:	17750/9182	
	2021- 11-11	16:21:03.782,	rideau:	info:	transfer	speed:	989.098145	frames/s;	frame	count	transferred/written:	18146/9971	
	2021-11-11	16:2 1:04.083,	rideau:	info:	transfer	speed:	989.613159	frames/s;	frame	count	transferred/written:	18393/10823	
	2021-11-11	16:2 1:04.383,	rideau:	info:	transfer	speed:	991.753418	frames/s;	frame	count	transferred/written:	18780/11995	
	2021-11-11	16:2 1:04.683,	rideau:	info:	transfer	speed:	994.327759	frames/s;	frame	count	transferred/written:	19105/12548	
	2021- 11-11	16:2 1:04.983,	rideau:	info:	transfer	speed:	995.761169	frames/s;	frame	count	transferred/written:	19369/13292	
	2021- 11-11	16:2 1:05.284,	rideau:	info:	transfer	speed:	999.239868	frames/s;	frame	count	transferred/written:	19731/14267	
	2021-11-11	16:2 1:05.584,	rideau:	info:	transfer	speed:	1000.603943	3 frames/s	; frame	count	transferred/written:	20071/15103	
	2021-11-11	16:2 1:05.884,	rideau:	info:	transfer	speed:	1004.713989) frames/s	; frame	count	transferred/written:	20472/15901	
	2021-11-11	16:2 1:06.184,	rideau:	info:	transfer	speed:	1006.956299) frames/s	; frame	count	transferred/written:	20799/16765	
	2021-11-11	16:2 1:06.485,	rideau:	info:	transfer	speed:	1011.179749) frames/s	; frame	count	transferred/written:	21199/17508	
	2021-11-11	16:2 1:06.785,	rideau:	info:	transfer	speed:	1014.123352	2 frames/s	; frame	count	transferred/written:	21561/18370	
	2021-11-11	16:2 1:07.085,	rideau:	info:	transfer	speed:	1018.126160) frames/s	; frame	count	transferred/written:	22009/19310	
	2021-11-11	16:2 1:07.386,	rideau:	info:	transfer	speed:	1019.670471	frames/s	; frame	count	transferred/written:	22289/19749	
	2021-11-11	16:21: 07.686,	rideau:	info:	transfer	speed:	1022.518250) frames/s	; frame	count	transferred/written:	22709/20415	
	2021-11-11	16:21: 07.986,	rideau:	info:	transfer	speed:	1024.342163	3 frames/s	; frame	count	transferred/written:	23018/20848	
	2021-11-11	16:21:08.286,	rideau:	info:	transfer	speed:	1027.055176	Trames/s	; Trame	count	transferred/written:	23473/21473	
	2021-11-11	16:21:08.588,	rideau:	info:	transfer	speed:	1029.521118	s trames/s	; Trame	count	transferred/written:	23751/21774	
	2021-11-11	16:21:08.889,	rideau:	info:	transfer	speed:	1031.258301	Trames/s	; Trame	count	transferred/written:	24169/22322	
	2021-11-11	16:21:09.190,	rideau:	info:	transfer	speed:	1031.596069	Trames/s	; Trame	count	transferred/written:	24455/22770	
	2021-11-11	16:21:09.490,	rideau:	info:	transfer	speed:	1032.396484	+ Trames/s	; Trame	count	transferred/written:	24/18/23169	
	2021-11-11	16:21:09.790,	rideau:	info:	transfer	speed:	1030.758911	Trames/s	; Trame	count	transferred/written:	25064/23892	
	2021-11-11	16:21:10.092,	rideau:	info:	transfer	speed:	1030.784302	frames/s	; Trame	count	transferred/written:	25294/24287	
	2021-11-11	16:21:10.396,	rideau:	info:	transfer	speed:	1032.202393	frames/s	; Trame	count	transferred/written:	250/8/25058	
	2021-11-11	16:21:10.693,	rideau:	info:	transfer	speed:	1032.134644	frames/s	; Trame	count	transferred/written:	25900/25546	
	2021-11-11	16:21:10.997,	rideau:	info:	transfer	speed:	1033.793091	frames/s	; frame	count	transferred/written:	20350/20240	
	2021-11-11	16:21:11.293,	rideau:	info:	transfer	speed:	1033.345581	frames/s	; Trame	count	transferred/written:	20029/2002/	
	2021-11-11	16:21:11.592,	rideau:	info:	transfer	speed:	1034.30/554	+ frames/s	; frame	count	transferred/written:	27005/27003	
	2021-11-11	16:21:11.892,	rideau:	info:	transfer	speed:	1035.083228	frames/s	, frame	count	transferred/written:	2/315/2/310	
	2021-11-11	10:21:12.193,	rideau:	into:	transter	speea:	1030.022681	rrames/s	; тгаме	count	transferred/written:	2/099/2/001	



2021- 11-11	16:21:12.493,	rideau:	info:	transfer	speed:	1038.828125	frames/s;	frame	count	transferred/written:	28045/28018
2021- 11-11	16:21:12.795,	rideau:	info:	transfer	speed:	1040.709351	frames/s;	frame	count	transferred/written:	28449/28369
2021- 11-11	16:21:13.095,	rideau:	info:	transfer	speed:	1041.617798	frames/s;	frame	count	transferred/written:	28730/28611
2021- 11-11	16:21:13.395,	rideau:	info:	transfer	speed:	1040.899902	frames/s;	frame	count	transferred/written:	29097/28891
2021- 11-11	16:21:13.695,	rideau:	info:	transfer	speed:	1042.217651	frames/s;	frame	count	transferred/written:	29381/29199
2021- 11-11	16:21:13.995,	rideau:	info:	transfer	speed:	1044.113892	frames/s;	frame	count	transferred/written:	29826/29571
2021- 11-11	16:21:14.295,	rideau:	info:	transfer	speed:	1044.985596	frames/s;	frame	count	transferred/written:	30096/29774
2021- 11-11	16:2 1:14.595,	rideau:	info:	transfer	speed:	1045.569336	frames/s;	frame	count	transferred/written:	30352/30017
2021- 11-11	16:2 1:14.896,	rideau:	info:	transfer	speed:	1046.264648	frames/s;	frame	count	transferred/written:	30812/30513
2021- 11-11	16:2 1:15.196,	rideau:	info:	transfer	speed:	1048.627563	frames/s;	frame	count	transferred/written:	31113/30869
2021-11-11	16:2 1:15.496,	rideau:	info:	transfer	speed:	1050.516846	frames/s;	frame	count	transferred/written:	31504/31279
2021- 11-11	16:2 1:15.796,	rideau:	info:	transfer	speed:	1050.968018	frames/s;	frame	count	transferred/written:	31817/31664
2021- 11-11	16:2 1:16.097,	rideau:	info:	transfer	speed:	1052.219360	frames/s;	frame	count	transferred/written:	32212/32208
2021- 11-11	16:2 1:16.397,	rideau:	info:	transfer	speed:	1054.047729	frames/s;	frame	count	transferred/written:	32565/32563
2021- 11-11	16:2 1:16.697,	rideau:	info:	transfer	speed:	1054.041626	frames/s;	frame	count	transferred/written:	32923/32921
2021- 11-11	16:2 1:16.998.	rideau:	info:	transfer	speed:	1055.333008	frames/s;	frame	count	transferred/written:	33209/33187
2021- 11-11	16:2 1:17.302,	rideau:	info:	transfer	speed:	1056.388184	frames/s;	frame	count	transferred/written:	33651/33596
2021- 11-11	16:2 1:17.601,	rideau:	info:	transfer	speed:	1057.321167	frames/s;	frame	count	transferred/written:	33921/33911
2021- 11-11	16:2 1:17.902.	rideau:	info:	transfer	speed:	1058.578979	frames/s;	frame	count	transferred/written:	34331/34284
2021- 11-11	16:2 1:18.203.	rideau:	info:	transfer	speed:	1059.130615	frames/s:	frame	count	transferred/written:	34652/34548
2021- 11-11	16:2 1:18.502.	rideau:	info:	transfer	speed:	1059.567017	frames/s:	frame	count	transferred/written:	34926/34740
2021- 11-11	16:2 1:18.805,	rideau:	info:	transfer	speed:	1061.329956	frames/s;	frame	count	transferred/written:	35373/34935
2021-11-11	16:21:19.105.	rideau:	info:	transfer	speed:	1061.081665	frames/s:	frame	count	transferred/written:	35622/34971
2021- 11-11	16:2 1:19.405.	rideau:	info:	transfer	speed:	1062.959473	frames/s:	frame	count	transferred/written:	36019/34971
2021- 11-11	16:2 1:19.706,	rideau:	info:	transfer	speed:	1064.178467	frames/s;	frame	count	transferred/written:	36389/35018
2021- 11-11	16:2 1:20.008,	rideau:	info:	transfer	speed:	1064.721191	frames/s;	frame	count	transferred/written:	36768/35731
2021- 11-11	16:2 1:20.305,	rideau:	info:	transfer	speed:	1064.467651	frames/s;	frame	count	transferred/written:	37053/36061
2021- 11-11	16:21:20.605,	rideau:	info:	transfer	speed:	1065.933105	frames/s;	frame	count	transferred/written:	37447/36458
2021- 11-11	16:21:20.905,	rideau:	info:	transfer	speed:	1066.337158	frames/s;	frame	count	transferred/written:	37765/36815
2021- 11-11	16:21:21.206,	rideau:	info:	transfer	speed:	1066.292358	frames/s;	frame	count	transferred/written:	38007/37034
2021- 11-11	16:21:21.506,	rideau:	info:	transfer	speed:	1066.438965	frames/s;	frame	count	transferred/written:	38446/37453
2021- 11-11	16:21:21.806,	rideau:	info:	transfer	speed:	1066.980103	frames/s;	frame	count	transferred/written:	38686/37613
2021- 11-11	16:21:22.108,	rideau:	info:	transfer	speed:	1067.972168	frames/s;	frame	count	transferred/written:	39152/38062
2021- 11-11	16:21:22.407,	rideau:	info:	transfer	speed:	1068.882324	frames/s;	frame	count	transferred/written:	39434/38351
2021- 11-11	16:21:22.707,	rideau:	info:	transfer	speed:	1069.428833	frames/s;	frame	count	transferred/written:	39828/38738
2021- 11-11	16:21:23.008,	rideau:	info:	transfer	speed:	1070.002441	frames/s;	frame	count	transferred/written:	40121/39019
2021- 11-11	16:21:23.308,	rideau:	info:	transfer	speed:	1070.925781	frames/s;	frame	count	transferred/written:	40395/39334
2021- 11-11	16:21:23.608,	rideau:	info:	transfer	speed:	1072.324707	frames/s;	frame	count	transferred/written:	40888/39958
2021- 11-11	16:21:23.908,	rideau:	info:	transfer	speed:	1073.516724	frames/s;	frame	count	transferred/written:	41110/40264
2021- 11-11	16:21:24.209,	rideau:	info:	transfer	speed:	1074.978149	frames/s;	frame	count	transferred/written:	41640/40898
2021- 11-11	16:21:24.509,	rideau:	info:	transfer	speed:	1075.897583	frames/s;	frame	count	transferred/written:	41903/41227
2021- 11-11	16:21:24.809,	rideau:	info:	transfer	speed:	1077.792236	frames/s;	frame	count	transferred/written:	42448/41868
2021- 11-11	16:21:25.109,	rideau:	info:	transfer	speed:	1078.956909	frames/s;	frame	count	transferred/written:	42661/42188
2021- 11-11	16:21:25.410,	rideau:	info:	transfer	speed:	1080.623779	frames/s;	frame	count	transferred/written:	43205/42840
2021- 11-11	16:21:25.710,	rideau:	info:	transfer	speed:	1082.402466	frames/s;	frame	count	transferred/written:	43492/43230
2021- 11-11	16:21:26.010,	rideau:	info:	transfer	speed:	1083.755859	frames/s;	frame	count	transferred/written:	43996/43838
2021- 11-11	16:21:26.314,	rideau:	info:	transfer	speed:	1084.769531	<pre>frames/s;</pre>	frame	count	transferred/written:	44247/44158

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	2021-11-11 16:21:26.612,	rideau: info	: transfer	speed:	1085.686035	frames/s;	frame c	ount t	ransferred/written:	44570/44563
	2021-11-11 16:21:26.914,	rideau: info	: transfer	speed:	1087.753540	frames/s;	frame c	ount t	ransferred/written:	45089/45077
	2021-11-11 16:21:27.214,	rideau: info	: transfer	speed:	1088.724854	frames/s;	frame c	ount t	ransferred/written:	45379/45370
	2021-11-11 16:21:27.514.	rideau: info	: transfer	speed:	1089.681152	frames/s;	frame c	ount t	ransferred/written:	45816/45812
	2021-11-11 16:21:27.817.	rideau: info	: transfer	speed:	1090.283936	frames/s:	frame c	ount t	ransferred/written:	46149/46148
	2021-11-11 16:21:28.117.	rideau: info	: transfer	speed:	1091.683838	frames/s:	frame c	ount t	ransferred/written:	46452/46436
Mach Dun	2021-11-11 16:21:28.417	rideau: info	: transfer	speed:	1091.760742	frames/s:	frame c	ount t	ransferred/written:	46841/46827
Mach Run	2021-11-11 16:21:28,718	rideau: info	transfer	speed:	1093.508667	frames/s:	frame c	ount t	ransferred/written:	47161/47159
	2021-11-11 16:21:29 016	rideau: info	• transfer	speed.	1093 946655	frames/s;	frame c	ount t	ransferred/written:	47602/47601
	2021-11-11 16-21-29 316	rideau: info	· transfer	speed.	1004 783601	frames/s;	frame c		ransferred/written:	47050/47051
	$2021 \cdot 11 \cdot 11 \cdot 10 \cdot 21 \cdot 29 \cdot 510$,	rideau: info	: transfer	speed.	1005 544434	frames/s;	frame c		ransferred/written:	19397/19393
	2021-11-11 16:21:29.010,	rideau: info	transfer	speed.	1095.544454	frames/s,	frame c		ransferred/written:	40507 40505
	2021-11-11 10:21:29.910,	rideau: info		speed:	1095.744029	fidnes/s;			ansierred/witten:	48052/48048
	2021-11-11 16:21:30.217,	rideau: info	: transfer	speed:	1096.137207	frames/s;	frame c	bunt t	ransferred/written:	49055/49009
	2021-11-11 16:21:30.517,	rideau: info	: transfer	speed:	1096.678223	Trames/s;	rrame c	bunt t	ransferred/written:	49399/49346
	2021-11-11 16:21:30.817,	rideau: info	: transfer	speed:	1097.618896	trames/s;	Trame c	bunt ti	ransferred/written:	49766/49635
	2021-11-11 16:21:31.118,	rideau: info	: transfer	speed:	1098.240723	frames/s;	frame c	ount t	ransferred/written:	50076/50055
	2021-11-11 16:21:31.419,	rideau: info	: transfer	speed:	1098.777832	frames/s;	frame c	ount t	ransferred/written:	50382/50382
	2021- 11-11 16:2 1:31.719,	rideau: info	: transfer	speed:	1099.856323	frames/s;	frame c	ount t	ransferred/written:	50807/50806
	2021-11-11 16:21:32.019,	rideau: info	: transfer	speed:	1100.456909	frames/s;	frame c	ount t	ransferred/written:	51112/51107
	2021-11-11 16:21:32.319,	rideau: info	: transfer	speed:	1101.146606	frames/s;	frame c	ount t	ransferred/written:	51535/51525
	2021-11-11 16:21:32.619,	rideau: info	: transfer	speed:	1102.440918	frames/s;	frame c	ount t	ransferred/written:	51920/51916
	2021-11-11 16:21:32.920,	rideau: info	: transfer	speed:	1103.401978	frames/s;	frame c	ount t	ransferred/written:	52343/52339
	2021-11-11 16:21:33.220,	rideau: info	: transfer	speed:	1104.356079	frames/s;	frame c	ount t	ransferred/written:	52672/52669
	2021-11-11 16:21:33.520,	rideau: info	: transfer	speed:	1105.183228	frames/s;	frame c	ount t	ransferred/written:	53081/53080
	2021-11-11 16:21:33.820.	rideau: info	: transfer	speed:	1105.334229	frames/s;	frame c	ount t	ransferred/written:	53447/53444
	2021-11-11 16:21:34.121.	rideau: info	: transfer	speed:	1106.823730	frames/s;	frame c	ount t	ransferred/written:	53868/53862
	2021-11-11 16:21:34.422.	rideau: info	: transfer	speed:	1107.313965	frames/s:	frame c	ount t	ransferred/written:	54174/54159
	2021-11-11 16:21:34.722.	rideau: info	: transfer	speed:	1108.329712	frames/s:	frame c	ount t	ransferred/written:	54432/54419
	2021-11-11 16:21:35.025.	rideau: info	: transfer	speed:	1109.088135	frames/s:	frame c	ount t	ransferred/written:	54933/54930
	2021-11-11 16:21:35.325	rideau: info	: transfer	speed:	1110,427612	frames/s:	frame c	ount t	ransferred/written:	55230/55227
	2021-11-11 16:21:35.629	rideau: info	: transfer	speed:	1110,486938	frames/s:	frame c	ount t	ransferred/written:	55674/55672
	2021-11-11 16:21:35,930	rideau: info	• transfer	speed:	1111.073608	frames/s:	frame c	ount t	ransferred/written:	55980/55975
	2021-11-11 16:21:36 228	rideau: info	• transfer	speed.	1112 332275	frames/s;	frame c		ransferred/written:	56473/56466
	2021-11-11 16:21:36 528	rideau: info	• transfer	speed.	1112 447021	frames/s;	frame c		ransferred/written:	56781/56775
	2021-11-11 16-21-36 820	rideau: info	· transfer	speed.	1112.776562	frames/s;	frame c		ransferred/written:	57210/57218
	2021 - 11 - 11 10 - 21 - 30 - 625	rideau: info	transfer	speed.	1117.720302	frames/s,	frame c		ransferred/written:	57520/57524
	2021-11-11 10.21.37.120,	rideau. info	transfer	speed.	1114.331310	frames/s,	frame c		constant ed/written:	57565/57524
	2021-11-11 10:21:37.430,	rideau: info		speed:	1115.440055	frames/s;	frame c		constant ed/witten.	57905757904
	2021-11-11 16:21:37.729,	rideau: info	transfer	speed:	1110.074707	frames/s;			ransferred/written:	58295/58290
	2021-11-11 16:21:38.027,	rideau: info	cransfer	speed:	1110.272095	frames/s;	frame c	bunt t	ransferred/written:	58529/58525
	2021-11-11 16:21:38.328,	rideau: info	: transfer	speed:	1110.501157	frames/s;	ггаме с	bunt t	ransferred/written:	59010/59012
	2021-11-11 16:21:38.628,	rideau: info	: transfer	speed:	1116.6/40/2	Trames/s;	rrame c	bunt ti	ransferred/written:	59254/59237
	2021-11-11 16:21:38.928,	rideau: info	: transfer	speed:	1117.235352	Trames/s;	rrame c	ount t	ransferred/written:	59742/59741
	2021-11-11 16:21:39.228,	rideau: info	: transfer	speed:	1117.502930	trames/s;	frame c	ount t	ransferred/written:	59963/59963
	2021-11-11 16:21:39.528,	rideau: info	: transfer	speed:	1117.308350	frames/s;	frame c	ount t	ransferred/written:	60424/60422
	2021-11-11 16:21:39.829,	rideau: info	: transfer	speed:	1116.702515	frames/s;	frame c	ount t	ransferred/written:	60632/60626
	2021-11-11 16:21:40.129,	rideau: info	: transfer	speed:	1117.983643	frames/s;	frame c	ount t	ransferred/written:	61085/61083
	2021-11-11 16:21:40.429,	rideau: info	: transfer	speed:	1117.403931	frames/s;	frame c	ount t	ransferred/written:	61340/61334
	2021-11-11 16:21:40.729,	rideau: info	: transfer	speed:	1117.232178	frames/s;	frame c	ount t	ransferred/written:	61729/61720

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	2021-11-11	16:21:41.029,	rideau: info	: transfer	speed:	1117.422119	frames/s;	frame count	: transferred/written:	62012/62010
	2021-11-11	16:21:41.329,	rideau: info	: transfer	speed:	1117.775146	frames/s;	frame count	: transferred/written:	62450/62447
	2021-11-11	16:21:41.630,	rideau: info	: transfer	speed:	1117.439331	frames/s;	frame count	transferred/written:	62712/62710
	2021-11-11	16:21:41.930,	rideau: info	: transfer	speed:	1117.360840	frames/s;	frame count	transferred/written:	63089/63086
	2021-11-11	16:21:42.230,	rideau: info	: transfer	speed:	1117.392700	frames/s;	frame count	transferred/written:	63395/63395
	2021-11-11	16:21:42.530,	rideau: info	: transfer	speed:	1117.734375	frames/s;	frame count	transferred/written:	63691/63691
	2021-11-11	16:21:42.830,	rideau: info	: transfer	speed:	1117.739014	frames/s;	frame count	transferred/written:	64098/64094
	2021-11-11	16:21:43.131,	rideau: info	: transfer	speed:	1117.211182	frames/s;	frame count	transferred/written:	64323/64319
	2021-11-11	16:21:43.434,	rideau: info	: transfer	speed:	1117.638428	frames/s;	frame count	transferred/written:	64780/64778
	2021-11-11	16:21:43.732,	rideau: info	: transfer	speed:	1117.793335	frames/s;	frame count	transferred/written:	65069/65068
	2021-11-11	16:21:44.035,	rideau: info	: transfer	speed:	1117.480835	frames/s;	frame count	transferred/written:	65394/65391
	2021-11-11	16:21:44.338,	rideau: info	: transfer	speed:	1117.489990	frames/s;	frame count	transferred/written:	65696/65695
	2021-11-11	16:21:44.638,	rideau: info	: transfer	speed:	1117.786499	frames/s;	frame count	transferred/written:	66110/66110
	2021-11-11	16:21:44.936,	rideau: info	: transfer	speed:	1117.823486	frames/s;	frame count	transferred/written:	66430/66385
	2021-11-11	16:21:45.237,	rideau: info	: transfer	speed:	1116.982788	frames/s;	frame count	transferred/written:	66750/66640
/	2021-11-11	16:21:45.538,	rideau: info	: transfer	speed:	1117.243286	frames/s;	frame count	: transferred/written:	67078/67076
	2021-11-11	16:21:45.837,	rideau: info	: transfer	speed:	1117.612427	frames/s;	frame count	: transferred/written:	67486/67484
	2021-11-11	16:21:46.137,	rideau: info	: transfer	speed:	1117.909546	frames/s;	frame count	: transferred/written:	67781/67776
	2021-11-11	16:21:46.437,	rideau: info	: transfer	speed:	1117.489868	frames/s;	frame count	: transferred/written:	68001/67995
	2021-11-11	16:21:46.736,	rideau: info	: transfer	speed:	1117.183716	frames/s;	frame count	: transferred/written:	68466/68464
,	2021-11-11	16:21:47.037,	rideau: info	: transfer	speed:	1117.636475	frames/s;	frame count	: transferred/written:	68719/68719
	2021-11-11	16:21:47.337,	rideau: info	: transfer	speed:	1117.931763	frames/s;	frame count	: transferred/written:	69155/69147
	2021-11-11	16:21:47.639,	rideau: info	: transfer	speed:	1117.499390	frames/s;	frame count	: transferred/written:	69378/69371
/	2021-11-11	16:21:47.938,	rideau: info	: transfer	speed:	1117.473877	frames/s;	frame count	transferred/written:	69811/69806
	2021-11-11	16:21:48.239,	rideau: info	: transfer	speed:	1117.793945	frames/s;	frame count	transferred/written:	70099/70098
	2021-11-11	16:21:48.539,	rideau: info	: transfer	speed:	1117.716797	frames/s;	frame count	transferred/written:	70447/70444
	2021-11-11	16:21:48.839,	rideau: info	: transfer	speed:	1117.510376	frames/s;	frame count	: transferred/written:	70754/70753
	2021-11-11	16:2 1:49.139,	rideau: info	: transfer	speed:	1117.481201	frames/s;	frame count	transferred/written:	71130/71127
	2021-11-11	16:2 1:49.439,	rideau: info	: transfer	speed:	1117.479248	frames/s;	frame count	transferred/written:	71447/71445
	2021-11-11	16:2 1:49.740,	rideau: info	: transfer	speed:	1117.362793	frames/s;	frame count	transferred/written:	71801/71798
	2021-11-11	16:2 1:50.040,	rideau: info	: transfer	speed:	1117.006226	frames/s;	frame count	transferred/written:	72109/72108
	2021-11-11	16:2 1:50.340,	rideau: info	: transfer	speed:	1117.501709	frames/s;	frame count	transferred/written:	72355/72349
	2021-11-11	16:2 1:50.640,	rideau: info	: transfer	speed:	1118.004517	frames/s;	frame count	transferred/written:	72815/72814
	2021- 11-11	16:2 1:50.940,	rideau: info	: transfer	speed:	1117.640259	frames/s;	frame count	transferred/written:	73045/73042
	2021- 11-11	16:2 1:51.241,	rideau: info	: transfer	speed:	1117.433228	frames/s;	frame count	transferred/written:	73512/73508
	2021- 11-11	16:2 1:51.541,	rideau: info	: transfer	speed:	1117.665405	frames/s;	frame count	transferred/written:	73760/73758
	2021-11-11	16:2 1:51.841,	rideau: info	: transfer	speed:	1118.134766	frames/s;	frame count	transferred/written:	74202/74202
	2021-11-11	16:2 1:52.142,	rideau: info	: transfer	speed:	1118.119629	frames/s;	frame count	transferred/written:	74446/74442
	2021-11-11	16:2 1:52.443,	rideau: info	: transfer	speed:	1117.835815	frames/s;	frame count	transferred/written:	74902/74899
	2021-11-11	16:21:52.747,	rideau: info	: transfer	speed:	1118.020752	trames/s;	frame count	transferred/written:	75141/75137
	2021-11-11	16:2 1:53.045,	rideau: info	: transfer	speed:	1118.128540	trames/s;	frame count	transferred/written:	75585/75585
	2021-11-11	16:2 1:53.345,	rideau: info	: transfer	speed:	1118.271851	trames/s;	Trame count	transferred/written:	75833/75828
	2021-11-11	16:2 1:53.648,	rideau: info	: transfer	speed:	1117.640259	trames/s;	Trame count	transferred/written:	76104/76096
	2021-11-11	16:2 1:53.948,	rideau: info	: transfer	speed:	1117.621704	trames/s;	frame count	transferred/written:	76498/76494
	2021-11-11	16:21:54.248,	rideau: info	: transfer	speed:	1118.312622	frames/s;	frame count	: transferred/written:	76754/76751

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2021-1	1-11 16:21:54.550,	rideau: info:	transfer s	speed: 1118.05	53589 frames/s;	frame count	t transferred/written:	77209/77205
2021-1	1-11 16:21:54.849,	rideau: info:	transfer s	speed: 1117.32	28979 frames/s;	frame count	t transferred/written:	77459/77437
2021-1	1-11 16:21:55.148,	rideau: info:	transfer s	speed: 1118.12	27197 frames/s;	frame count	t transferred/written:	77874/77870
2021-1	1-11 16:21:55.449,	rideau: info:	transfer s	speed: 1118.14	45020 frames/s;	frame count	t transferred/written:	78143/78143
2021-1	1-11 16:21:55.749,	rideau: info:	transfer s	speed: 1118.08	89600 frames/s;	frame count	t transferred/written:	78587/78584
2021-1	1-11 16:21:56.049,	rideau: info:	transfer s	speed: 1117.80	05176 frames/s;	frame count	t transferred/written:	78825/78822
Mach Run 2021-1	1-11 16:21:56.349,	rideau: info:	transfer s	speed: 1118.05	53833 frames/s;	frame count	t transferred/written:	79252/79251
2021-1	1-11 16:21:56.650,	rideau: info:	transfer s	speed: 1118.24	47681 frames/s;	frame count	t transferred/written:	79536/79536
2021-1	1-11 16:21:56.950,	rideau: info:	transfer s	speed: 1117.97	70215 frames/s;	frame count	t transferred/written:	79967/79964
2021-1	1-11 16:21:57.251,	rideau: info:	transfer s	speed: 1117.73	35840 frames/s;	frame count	t transferred/written:	80163/80155
2021-1	1-11 16:21:57.550,	rideau: info:	transfer s	speed: 1117.90	68628 frames/s;	frame count	t transferred/written:	80580/80577
2021-1	1-11 16:21:57.851,	rideau: info:	transfer s	speed: 1118.24	49756 frames/s;	frame count	t transferred/written:	80873/80873
2021-1	1-11 16:21:58.151,	rideau: info:	transfer s	speed: 1117.70	69043 frames/s;	frame count	t transferred/written:	81257/81250
2021-1	1-11 16:21:58.451,	rideau: info:	transfer s	speed: 1117.74	41821 frames/s;	frame count	t transferred/written:	81518/81515
2021-1	1-11 16:21:58.751,	rideau: info:	transfer s	speed: 1118.10	67725 frames/s;	frame count	t transferred/written:	81955/81954
2021-1	1-11 16:21:59.052,	rideau: info:	transfer s	speed: 1118.39	94897 frames/s;	frame count	t transferred/written:	82238/82237
2021-1	1-11 16:21:59.352,	rideau: info:	transfer s	speed: 1117.40	64600 frames/s;	frame count	t transferred/written:	82600/82594
2021-1	1-11 16:21:59.652,	rideau: info:	transfer s	speed: 1117.74	49756 frames/s;	frame count	t transferred/written:	82892/82891
2021-1	1-11 16:21:59.953,	rideau: info:	transfer s	speed: 1118.24	46094 frames/s;	frame count	t transferred/written:	83174/83174
2021-1	1-11 16:22:00.253,	rideau: info:	transfer s	speed: 1118.4	52148 frames/s;	frame count	t transferred/written:	83623/83621
2021-1	1-11 16:22:00.553,	rideau: info:	transfer s	speed: 1118.14	48682 frames/s;	frame count	t transferred/written:	83837/83836
2021-1	1-11 16:22:00.857,	rideau: info:	transfer s	speed: 1117.92	20166 frames/s;	frame count	t transferred/written:	84273/84270
2021-1	1-11 16:22:01.158,	rideau: info:	transfer s	speed: 1118.47	73999 frames/s;	frame count	t transferred/written:	84568/84565
2021-1	1-11 16:22:01.458,	rideau: info:	transfer s	speed: 1118.42	26025 frames/s;	frame count	t transferred/written:	84993/84989
2021-1	1-11 16:22:01.758,	rideau: info:	transfer s	speed: 1118.03	31128 frames/s;	frame count	t transferred/written:	85223/85222
2021-1	1-11 16:22:02.059,	rideau: info:	transfer s	speed: 1117.98	87183 frames/s;	frame count	t transferred/written:	85648/85646
2021-1	1-11 16:22:02.359,	rideau: info:	transfer s	speed: 1118.51	15625 frames/s;	frame count	t transferred/written:	85946/85941
2021-1	1-11 16:22:02.659,	rideau: info:	transfer s	speed: 1118.13	34155 frames/s;	frame count	t transferred/written:	86311/86303
2021-1	1-11 16:22:02.960,	rideau: info:	transfer s	speed: 1117.99	97314 frames/s;	frame count	t transferred/written:	86591/86587
2021-1	1-11 16:22:03.261,	rideau: info:	transfer s	speed: 1118.10	64185 frames/s;	frame count	t transferred/written:	86984/86982
2021-1	1-11 16:22:03.559,	rideau: info:	transfer s	speed: 1118.21	19116 frames/s;	frame count	t transferred/written:	87324/87321
2021-1	1-11 16:22:03.860,	rideau: info:	transfer s	speed: 1118.31	18115 frames/s;	frame count	t transferred/written:	87520/87514
2021-1	1-11 16:22:04.160,	rideau: info:	transfer s	speed: 1117.90	65820 frames/s;	frame count	t transferred/written:	87967/87966
2021-1	1-11 16:22:04.460,	rideau: info:	transfer s	speed: 1118.02	28809 frames/s;	frame count	t transferred/written:	88203/88199
2021-1	1-11 16:22:04.760,	rideau: info:	transfer s	speed: 1118.48	89990 frames/s;	frame count	t transferred/written:	88710/88702
2021-1	1-11 16:22:05.061,	rideau: info:	transfer s	speed: 1118.25	53784 frames/s;	frame count	t transferred/written:	88909/88906
2021-1	1-11 16:22:05.361,	rideau: info:	transfer s	speed: 1117.92	26392 frames/s;	frame count	t transferred/written:	89294/89289
2021-1	1-11 16:22:05.661,	rideau: info:	transfer s	speed: 1118.03	33325 frames/s;	frame count	t transferred/written:	89585/89583
2021-1	1-11 16:22:05.961,	rideau: info:	transfer s	speed: 1118.18	86523 frames/s;	frame count	t transferred/written:	89998/89996
2021-1	1-11 16:22:06.261,	rideau: info:	transfer s	speed: 1118.00	04883 frames/s;	frame count	t transferred/written:	90243/90241
2021-1	1-11 16:22:06.562,	rideau: info:	transfer s	speed: 1117.80	64258 frames/s;	frame count	t transferred/written:	90602/90600
2021-1	1-11 16:22:06.862,	rideau: info:	transfer s	speed: 1118.07	75562 frames/s;	frame count	t transferred/written:	90964/90964
2021-1	1-11 16:22:07.163,	rideau: info:	transfer s	speed: 1117.90	08081 frames/s;	frame count	t transferred/written:	91312/91310
2021-1	1-11 16:22:07.465,	rideau: info:	transfer s	speed: 1117.88	81836 frames/s;	frame count	t transferred/written:	91620/91614
2021-1	1-11 16:22:07.764,	rideau: info:	transfer s	speed: 1117.94	48730 frames/s;	frame count	t transferred/written:	91992/91988

Mach Run

2021-11-11 16:22:08.064, rideau: info: transfer speed: 1118.007446 frames/s; frame count transferred/written: 92348/92341 2021-11-11 16:22:08.364, rideau: info: transfer speed: 1117.896240 frames/s; frame count transferred/written: 92581/92574 2021-11-11 16:22:08.665, rideau: info: transfer speed: 1118.036987 frames/s; frame count transferred/written: 93001/92998 2021-11-11 16:22:08.965, rideau: info: transfer speed: 1117.997803 frames/s; frame count transferred/written: 93240/93240 2021-11-11 16:22:09.266, rideau: info: transfer speed: 1118.042847 frames/s; frame count transferred/written: 93734/93730 2021-11-11 16:22:09.570, rideau: info: transfer speed: 1118.249756 frames/s; frame count transferred/written: 93955/93951 2021-11-11 16:22:09.871, rideau: info: transfer speed: 1118.007812 frames/s; frame count transferred/written: 94329/94325 2021-11-11 16:22:10.173, rideau: info: transfer speed: 1118.086914 frames/s; frame count transferred/written: 94614/94611 2021-11-11 16:22:10.470, rideau: info: transfer speed: 1117.766113 frames/s; frame count transferred/written: 95029/95023 2021-11-11 16:22:10.769. rideau: info: transfer speed: 1118.157959 frames/s; frame count transferred/written: 95305/95305 2021-11-11 16:22:11.072, rideau: info: transfer speed: 1118.411621 frames/s; frame count transferred/written: 95730/95724 2021-11-11 16:22:11.372, rideau: info: transfer speed: 1118.121338 frames/s; frame count transferred/written: 96009/96004 2021-11-11 16:22:11.672, rideau: info: transfer speed: 1118.099243 frames/s; frame count transferred/written: 96388/96382 2021-11-11 16:22:11.972, rideau: info: transfer speed: 1118.362061 frames/s; frame count transferred/written: 96703/96703 2021-11-11 16:22:12.270, rideau: info: transfer speed: 1118.429688 frames/s; frame count transferred/written: 97059/97058 2021-11-11 16:22:12.570, rideau: info: transfer speed: 1118.117065 frames/s; frame count transferred/written: 97381/97380 2021-11-11 16:22:12.870, rideau: info: transfer speed: 1118.194336 frames/s; frame count transferred/written: 97613/97609 2021-11-11 16:22:13.171, rideau: info: transfer speed: 1118.302368 frames/s; frame count transferred/written: 98058/98053 2021-11-11 16:22:13.471, rideau: info: transfer speed: 1118.382690 frames/s; frame count transferred/written: 98282/98277 2021-11-11 16:22:13.771, rideau: info: transfer speed: 1118.314697 frames/s; frame count transferred/written: 98747/98738 2021-11-11 16:22:14.071, rideau: info: transfer speed: 1118.685059 frames/s; frame count transferred/written: 98978/98978 2021-11-11 16:22:14.371, rideau: info: transfer speed: 1118.417847 frames/s; frame count transferred/written: 99458/99456 2021-11-11 16:22:14.672, rideau: info: transfer speed: 1118.366333 frames/s; frame count transferred/written: 99660/99659 2021-11-11 16:22:14.972, rideau: info: transfer speed: 1118.505371 frames/s; frame count transferred/written: 99999/99999

Collect Log Test									Machine current		
Sample centring							ISPyB proposal			120.4 mA	
Omega: 102.68 📜 🖉 90.0	•	Kappa: 180.00 ‡ Phi:	360.00 🗘 🖉 10.0 - 📽	bcx	er_4 (Point not defined)		MX836 - Time-Resolved Crystallog	raphy an • Group: Set	Machine state	Dataiata - Evenada	
Front light: 100.00 + +			0.02	Standard Collect	ion		Sample tree			Betried->Experim	ente
		20011 5 10003.	0.02 .00 00.01	Acquisition			Mode: Manually mount	Show SC-details	Front End, undulat	0.08 GeV , 480 Bu	icites
			Centre	Oscillation start:	102.68 Osc. range per fram	e: 0.01	Sample: *	SE ISPAR	fronc End, and all	Opened 10.94	nm
			A	Number of image	s:300000 Total osc range:	000.00	Filter:	No filter	Hutch temperatur	e and humidity	
			Save	First image:	1 Full osc range	000.00		Homeer		23.6 C, 23.2 9	Ď
						200.00	* I manually-mounted Standard - 3		Measured / Estima	ted flux	
			Line	Exposure time (s):	.00096 Total exp. time (s):	288.00	 Manual centring (kappa=0.0, phi 	=0.0)	Flux : 1.87	E+12 ph/s / 1.88E-	13 ph/s
			Caid.	карра:	180 Phi:	360	bcxer_1 (Point not defined)	Collection done ••••	Transmission : 9%	/ 100.0%	
			Gfld	Energy (keV):	2.7002 - MAD	ip:	Standard - 4	0.0)	Beam size : 7x3	/ 7x3	
			Focus	Resolution (A):	2 Detector mode:	4M -	bcxer 2 (Point not defined)	Collection done	Cryoject in place		
			8	- Transmission (%):	100		🖻 🗆 Standard - 5		Cample shapes	In place Temp: 30	J.03 K
			Snapsho	* Shutterless			Manual centring (kappa=0.0,phi	=0.0)	Sample changer	Dowar lovel in r	0.00
			•	Data location			DCXEr_3 (POINT NOT DEFINED)	Done	Frames dropped	Dewarteverinita	nge
			Align	Folder:			Manual centring (kappa=0.0,phi	=0.0)	Traines dropped		
			Selectal	/mnt/beenfs/P14	/2021/p3l-aleb1/20211125/R	AW DATA	bcxer_4 (Point not defined)	105616/300000 • • •	Energy		
			Seleccol	bexer tr					Currer 12.7(102 keV	
	+		Clear al	File name: boxe	4 ####### cbf az	Browse			Wavelength: 0.97	52 Å	
	and the second second		D	Profix boxe		DIOWSC			Chature:	IZ A	
			Auto	Pup pumber 4					Status.		les)
				x Compross data					Set to:		Kev
				* Compress data					* Center beam arte	ar energy change	
				Processing					Iransmission		
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				14.0. 16510065. 20	space group.				Set to:		
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				α:0 β·0	v: 0				142.87 mm		
				and pro-					Set to:		Å
50 h				* Run processing	after collection				Beamstop distanc	e	
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<u>10</u> 0 μ									Set to:		
X: 976 Y: 882										Door interlor	k
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Beam size Slits	Aperture		Phase	Helical Collection					1.000	Disabled	L Class
Horizontal: 7.0 µm Horizonta	al: 6977 µm 300 📜 🖉 🔍 150µ 🔹		DataCollection	Energy Scan				(F)	* Oper	1	I CLOSE
Vertical: 3.0 µm Vertical:	5960 µm 300 🗇 🔍 🔍 BEAM 🔸			XRF Spectrum			Queue history		Image tracking		Detector status
Beamline mode CRL	Beam positioning (Double mod	e)		A dura and			û 0.	P ₀ ±	rea	idy	Exposing
Double Manual	- Sot & Horizontal: 2 8307 * a a	@ #0.001 - #		Auvanceu			• Stop	Pause	* Enable Adxv ima	ge tracking	Frame rate : 999
Mandat				Xray Imaging			Collection		* Filter frames bas	ed on Dozor score	Temperature : 28.1
	Out Vertical: 3.3292	◙ ₽0.001 ≥ 으			Ad	d to queue	35%	%	* Indicate spots		Humidity : 0.09
Heat map							[2021 11 25 10:55:04] Collection Stor		and the films		
Display image in ADxV							[2021-11-25 16:33:05] Collection: Creat	ing sample info from parameters	processing rites		
2.38							[2021-11-25 16:33:05] Collection: Stori	ng sample info in LIMS		D-	1
317							[2021-11-25 16:33:05] Collection: Movi	ng to centred position		L J	
3.17							[2021-11-25 16:33:05] Collection: Takin [2021-11-25 16:33:05] Collection: Setti	ng i sample snapsnot(s) ng transmission to 100.00		196-cor	a satun
4.75	100						[2021-11-25 16:33:05] Collection: Setti	ng energy to 12.7002		100 001	c setup
9.51							[2021-11-25 16:33:05] Collection: Setti	ng resolution to 2.000		Kirill F	Kovalev
inf50000	100000 150000 200000	250000 300000					[2021-11-25 16:33:05] processing_para [2021-11-25 16:33:05] Collection: Under	illel Underined	L		
5 50000	200000 200000						Tran The lower of concection obog	and concerton in Linis			

It's a Daemons' World



... and a tightly-knit community



Tioga: "where it forks"/"swift current"



Downstream Processing \rightarrow e.g. XDS via **xds-zcbf** plugin





Rideau: "curtain"

... behind which daemons play ...







- Listens to all configured Tiogas
- Collects and consolidates in real-time DOZOR results / status / properties
- Presents itself as a Tioga to clients
- ✤ Integrated at P14, P13





Single vs. Multiple Tioga Setups



🄟 📑 🛅 🖂 瞒 Mar 18 16:11:47 💻

1.15 Å



File system EDNA ISPyB

Detector status

Humidity

Ready

Frame rate : 1071.1 H

:0.0%

Temperature: 28.3°



Ivars Karpics, David von Stetten

It's a Daemons' World



...but it would be nothing without its computing, network and storage infrastructure EMBL

Acquisition Control: MxCuBE → Detector Server → PCO Server

Imaging







Reconstruction

/mnt/beegfs/P14/2022/nikolova/20220912/RAW DATA/platy3 platy 18.000189147 135.999267578,139.999755859,146.005126953,155.0 1,2,3,4 Mon Sep 12 18:53:38 CEST 2022 Reconstructing /mnt/beegfs/P14/2022/nikolova/20220912/RAW DATA/platy3 to /home/nikolova/20220912/PROCESSED DATA/platy3/tomo on bcrunch-n04 ENERGY= 18.000189147 PIXELSIZE= 0.325 DISTANCES= 0.060999, 0.065000, 0.071005, 0.080000, after flat-field correct FLATAVG = 3and pha ROI = 0,49, 1900, 1900BETADELTA= 0.1 ZEROCOMP= 0.1 PADDING= 200 Mon Sep 12 18:53:39 CEST 2022 Start CTF Mon Sep 12 18:54:37 CEST 2022 Done CTF 2022-09-12 18:54:40,885 started with: 2022-09-12 18:54:40,886 Input Directory: ./ctf 2022-09-12 18:54:40,886 Output Directory: ./tomo 2022-09-12 18:54:40,886 Padding:600 2022-09-12 18:54:57,942 projections loaded 1800 2022-09-12 18:54:57,942 Rotation center: 940.5 2022-09-12 18:55:32,089 stripes removed 2022-09-12 18:55:49,451 data padded 2022-09-12 18:55:51,023 log transform computed

2022-09-12 18:56:51,345 done... Mon Sep 12 18:56:56 CEST 2022 converting -auto-level ./tomo/slice_0300.tif /data/ispyb/p14/2022/nikolova/20220912/RAW_DATA/platy3/platy_2_1.snapshot.jpeg Mon Sep 12 18:56:56 CEST 2022 converting -auto-level ./tomo/slice_1200.tif /data/ispyb/p14/2022/nikolova/20220912/RAW_DATA/platy3/platy_3_1.snapshot.jpeg Mon Sep 12 18:56:56 CEST 2022 converting -auto-level ./tomo/slice_0900.tif /data/ispyb/p14/2022/nikolova/20220912/RAW_DATA/platy3/platy_3_1.snapshot.jpeg

Reconstruction now 20 x faster than last year and available at the beamline! ... but ... it can be improved further

- → Flat field corrections done only once
- → Use more than 1 cluster node

2022-09-12 18:56:47,701 recon computed 2022-09-12 18:56:48,845 circ mask applied

- → Reconstruction from python to C
- → Better calculation of rotation center





Acknowledgements

Gleb Bourenkov

Ivars Karpics
David von Stetten
Andrea d'Amato
Daniel Franke
Michael Agthe
Kirill Kovalev
Maxim Polykarpov
Jonas Albers
Elizabeth Duke
Thomas R. Schneider
EMBL-HH Instrumentation, and IT Groups
Stefan Fiedler

Andrew Arvai Phil Duval Sasha Popov Arwen Pearson and The University of Hamburg EMBL-Grenoble former & current Instrumentation Groups DECTRIS BMBF

> Bundesministerium für Bildung und Forschung



Thank you!



