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Using NTFS cluster allocation behavior to find the location of user data

By

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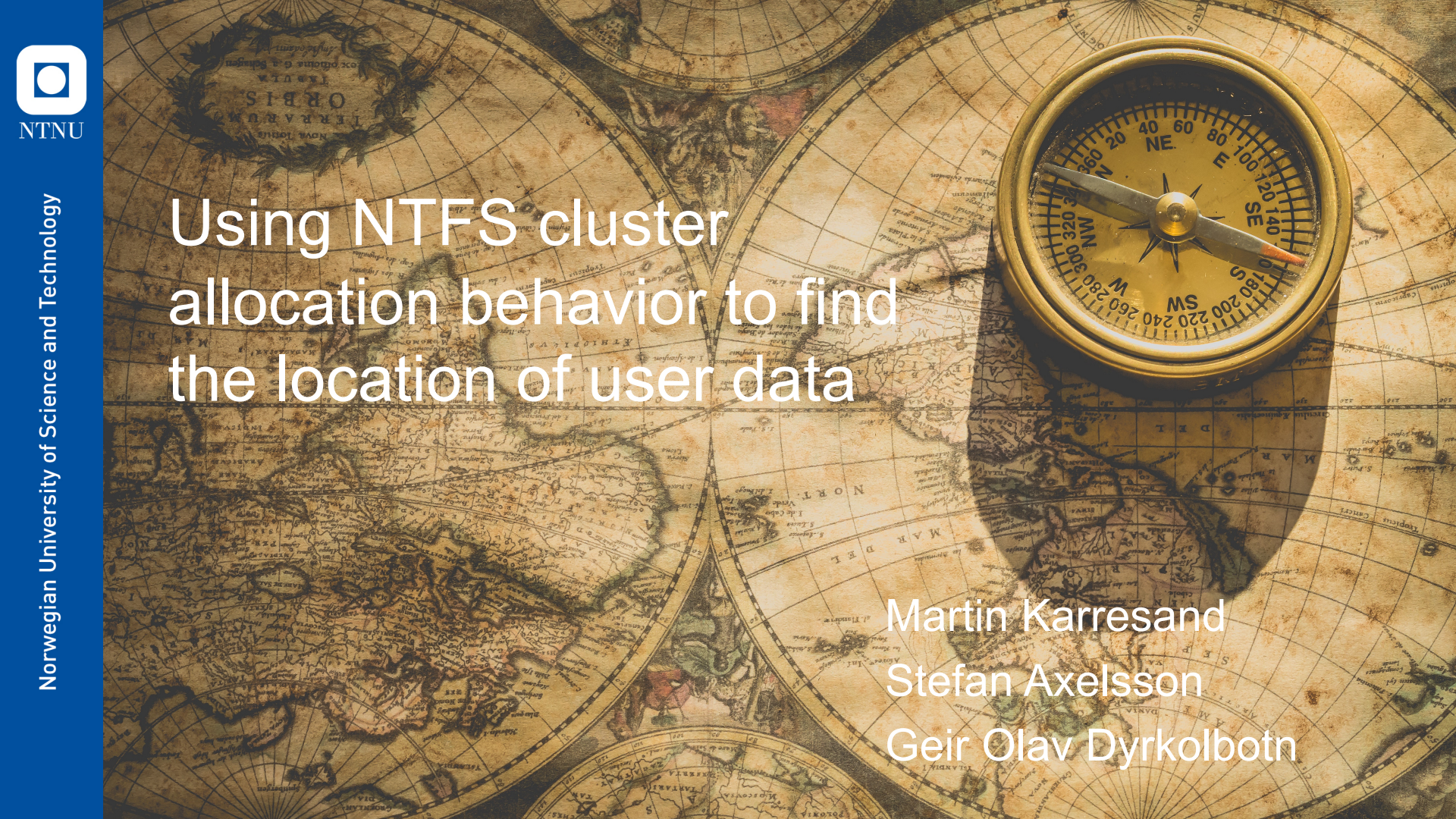
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Current Situation

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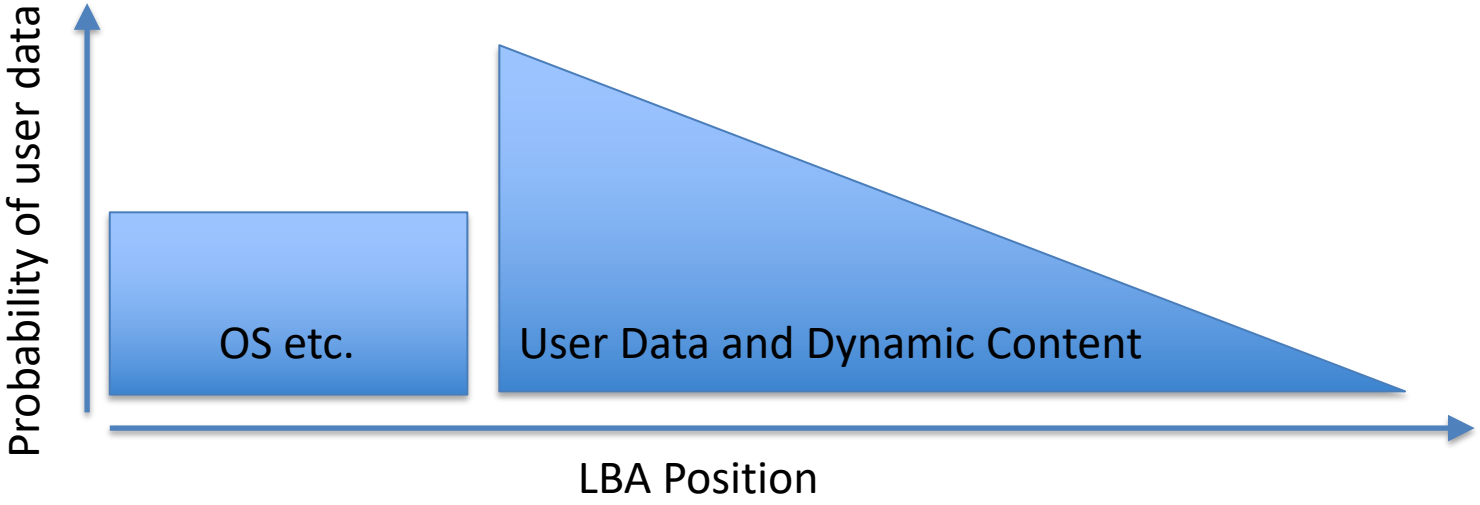
Our Vision

Hypothetic NTFS partition



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Experiment

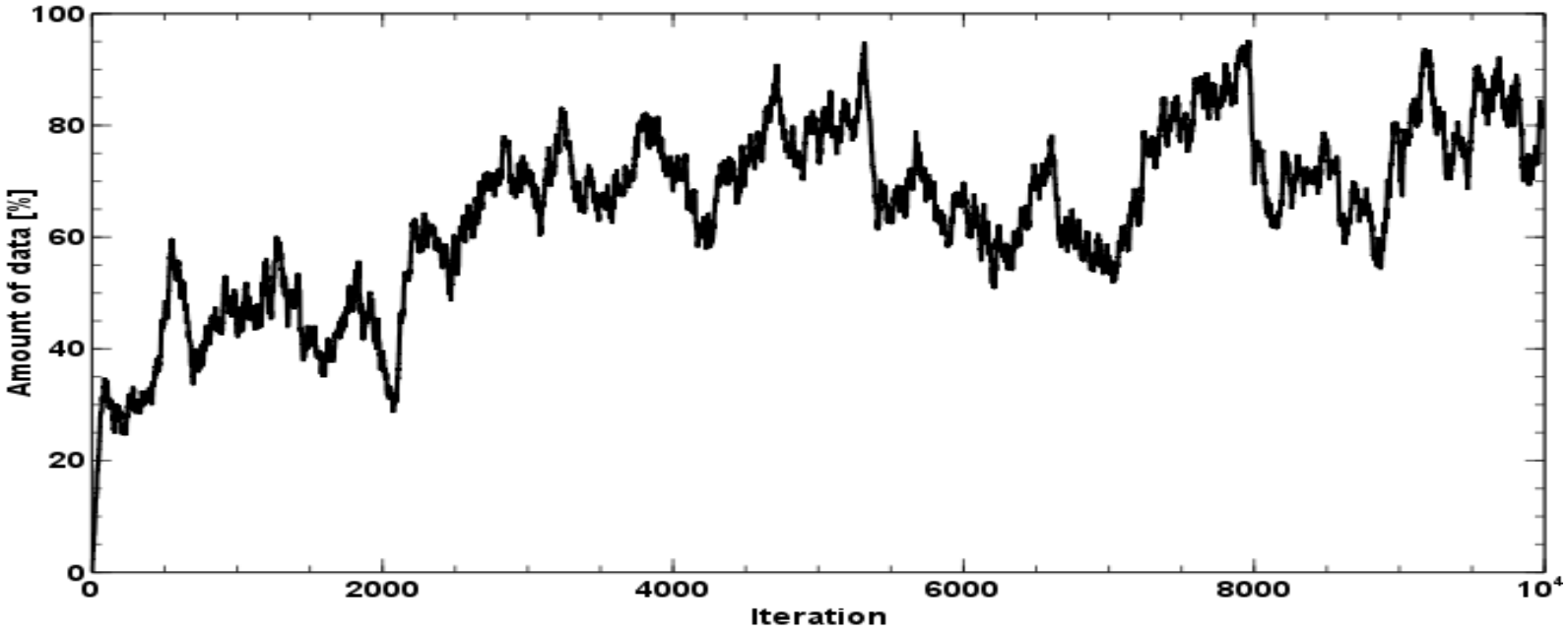
10000 file operations

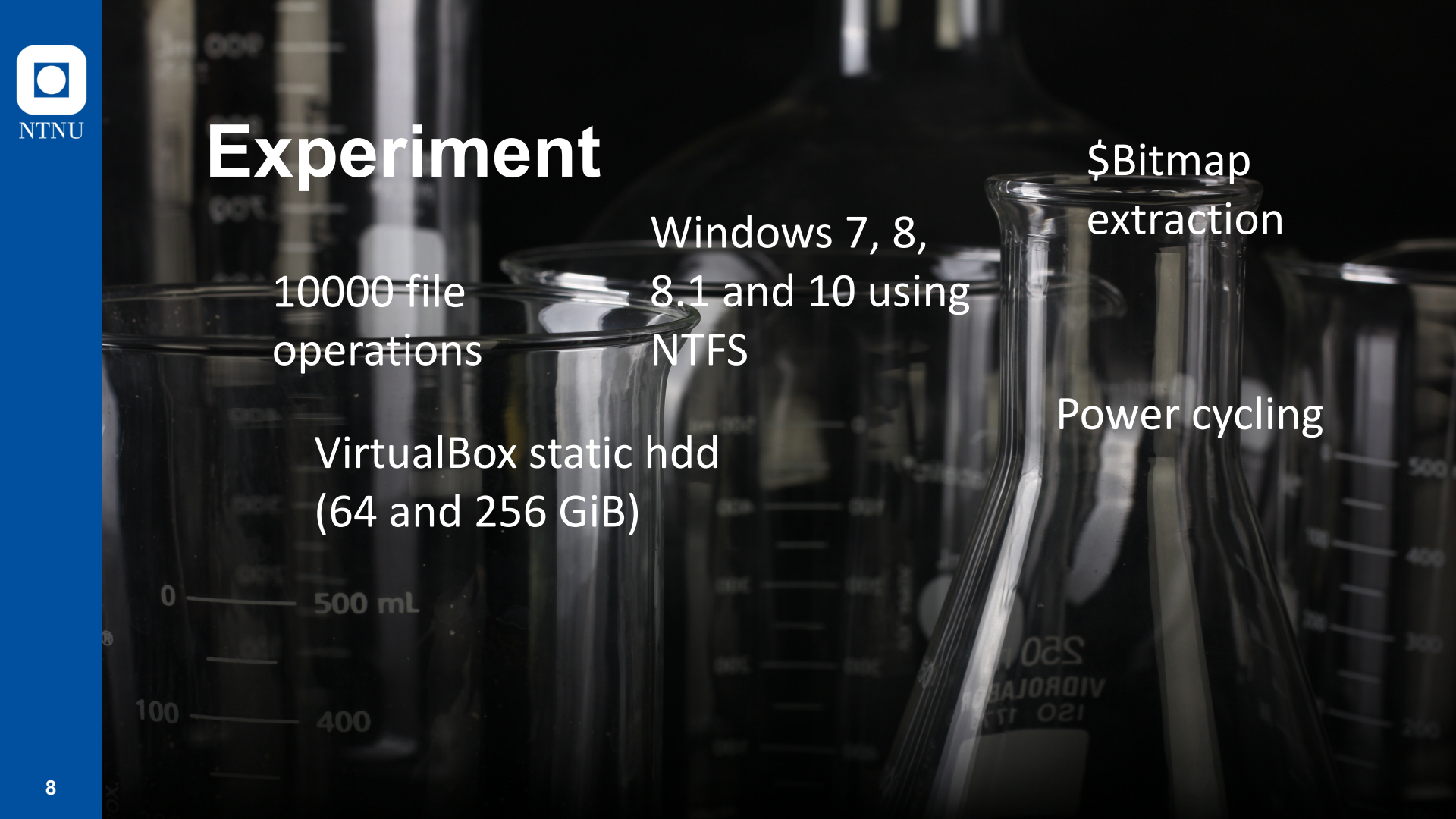
Windows 7, 8, 8.1 and 10 using NTFS

$Bitmap extraction

Power cycling

VirtualBox static hdd (64 and 256 GiB)


Amount of data [%]
Iteration
0
20
40
60
80
100
0
2000
4000
6000
8000
10^4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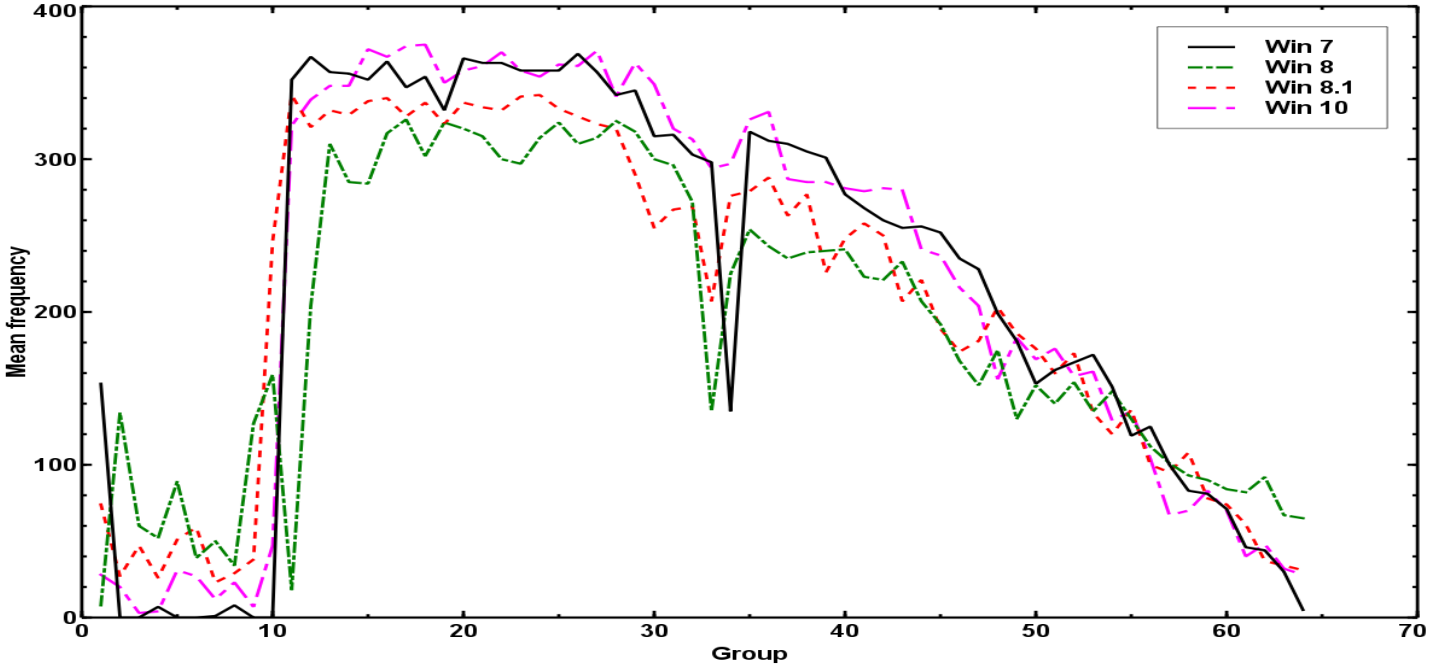
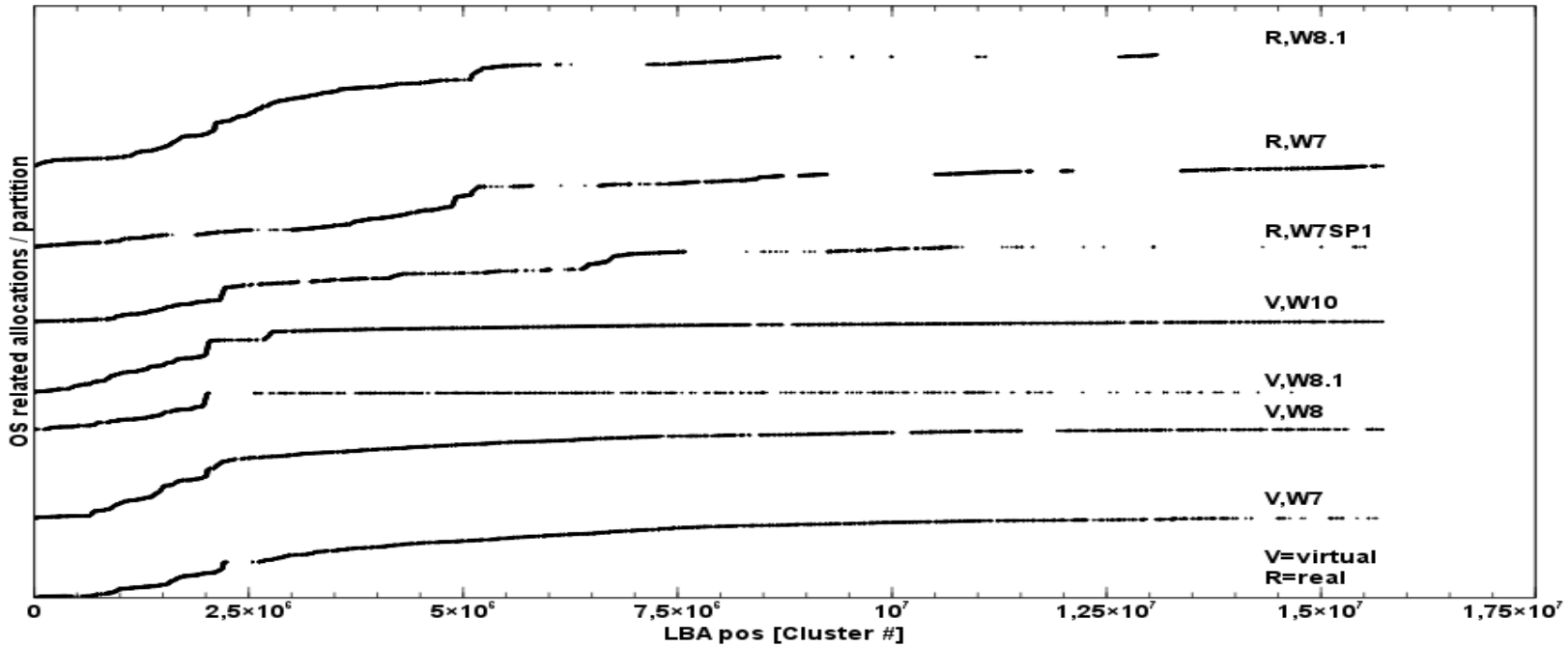
Experiment
10000 file operations
Windows 7, 8, 8.1 and 10 using NTFS
VirtualBox static hdd (64 and 256 GiB)
$Bitmap extraction
Power cycling
0
500 mL
100
400


Win 7
Win 8
Win 8.1
Win 10
Mean frequency
Group
0
100
200
300
400
0
10
20
30
40
50
60
70


R,W8.1
R,W7
R,W7SP1
V,W10
V,W8.1
V,W8
V,W7
V=virtual
R=real
OS related allocations / partition
0
2,5×10^6
5×10^6
7,5×10^6
10^7
1,25×10^7
1,5×10^7
1,75×10^7
LBA pos [Cluster #]

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To infinity and beyond!

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Questions?

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