



Workflow Oriented Storage

Focusing on Workflow Performance, Not Storage

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What are we making content for?



SD, HD, UHD TV, Internet, tablet & mobile



Flash Dominates Removable Media



Most modern cameras use flash removable storage

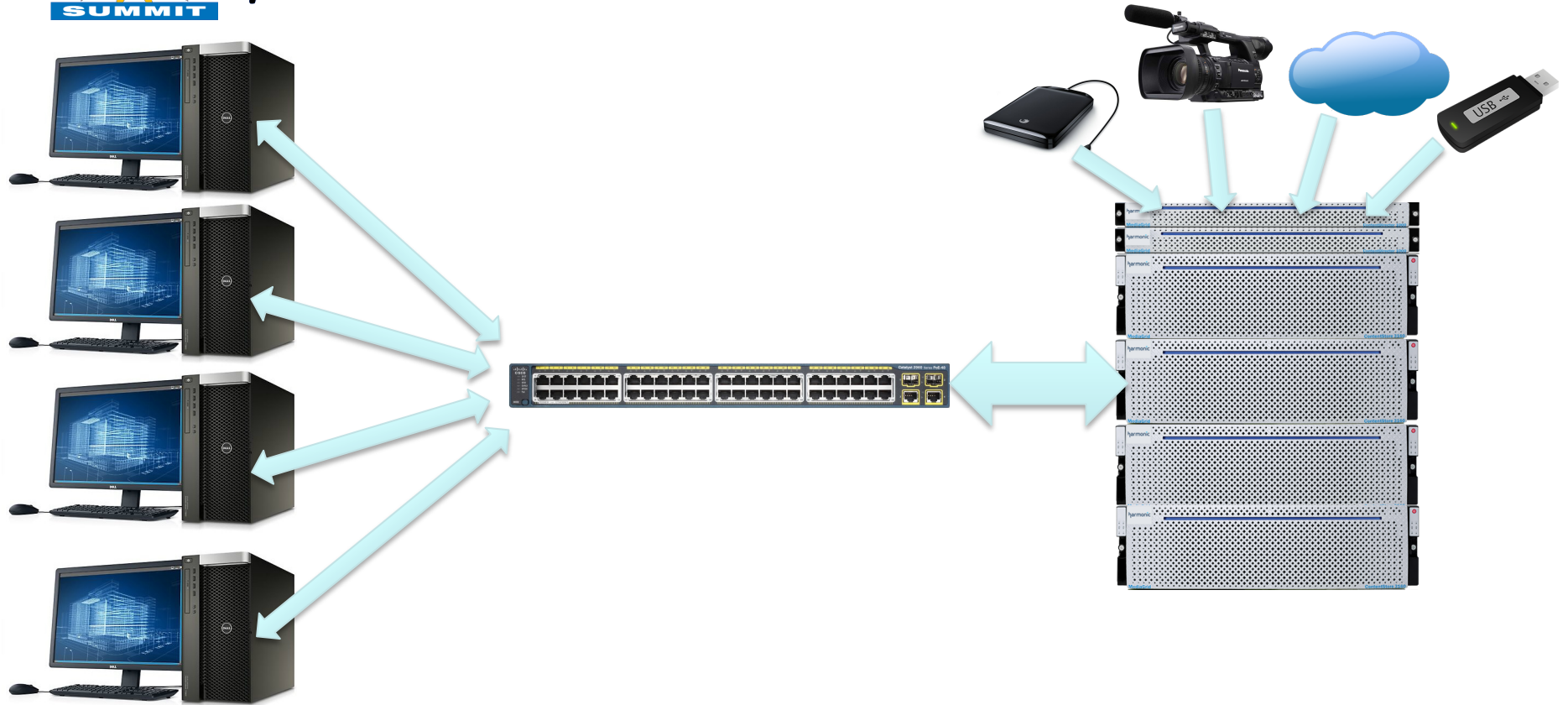


Local Editing





Collaborative Editing on a LAN





Geographical Dispersed Collaborative Editing



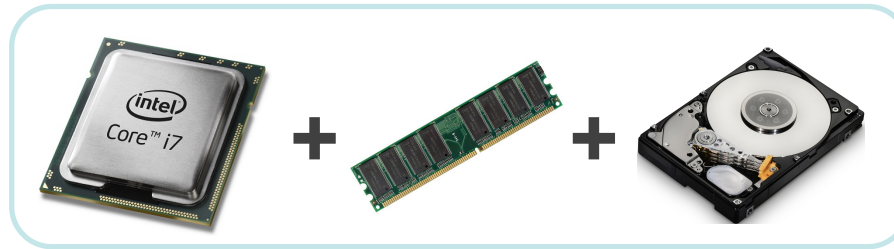
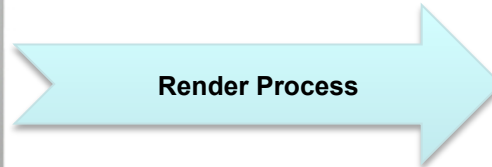


Read and Write Performance

- Editing and transcoding processes demand good write performance
 - IT based on premise and cloud storage tends to be read biased
- Balanced read and write performance is ideal for production applications

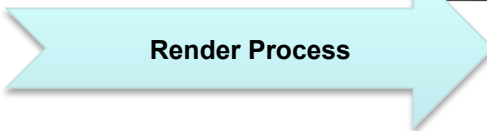


Outputting For One Screen

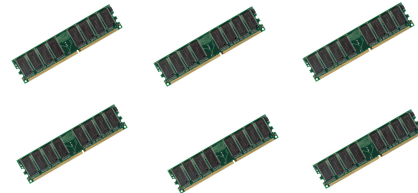




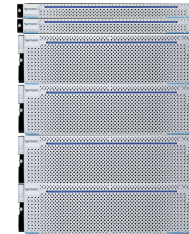
Creating Content for Many Screens



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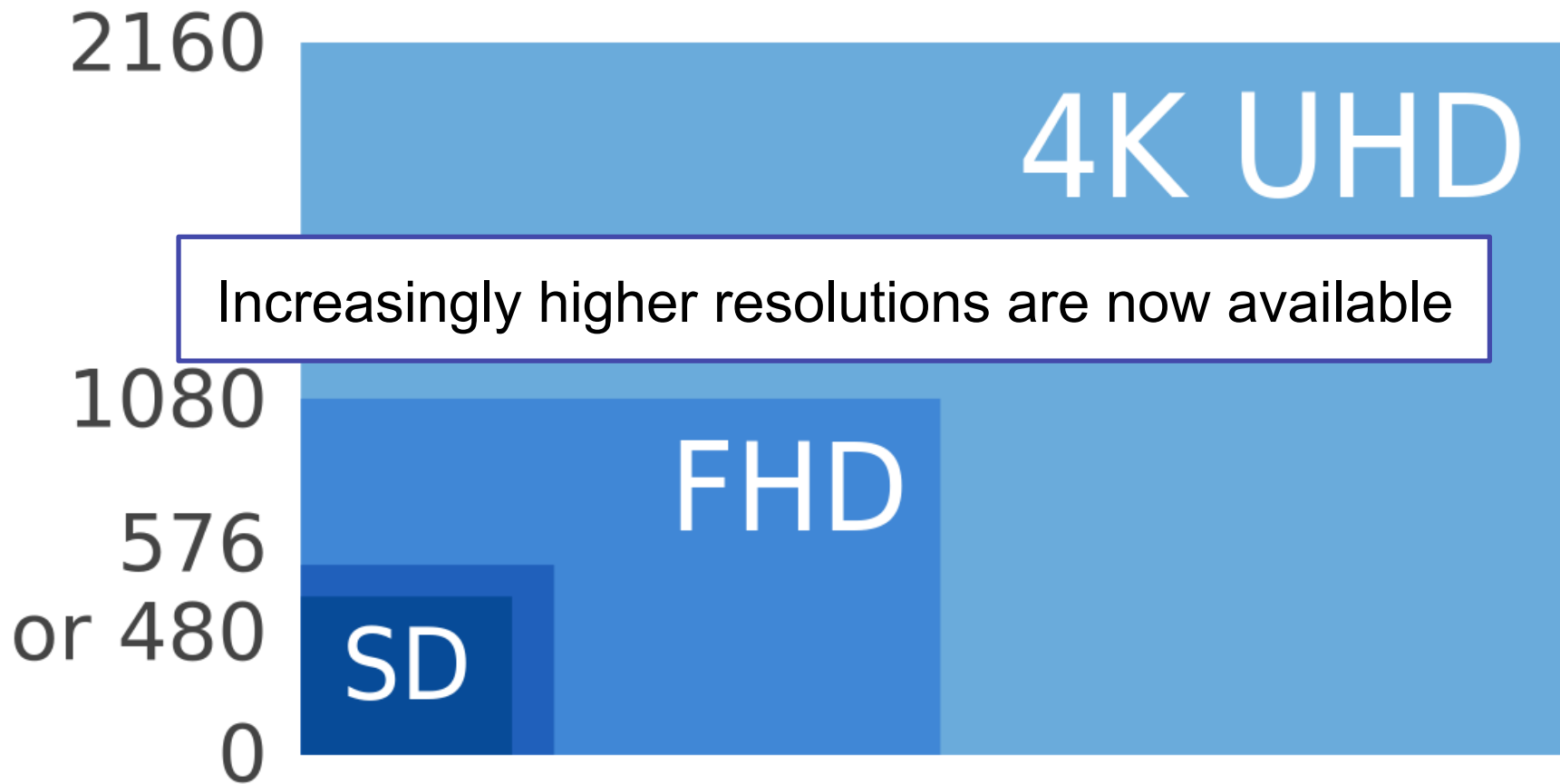


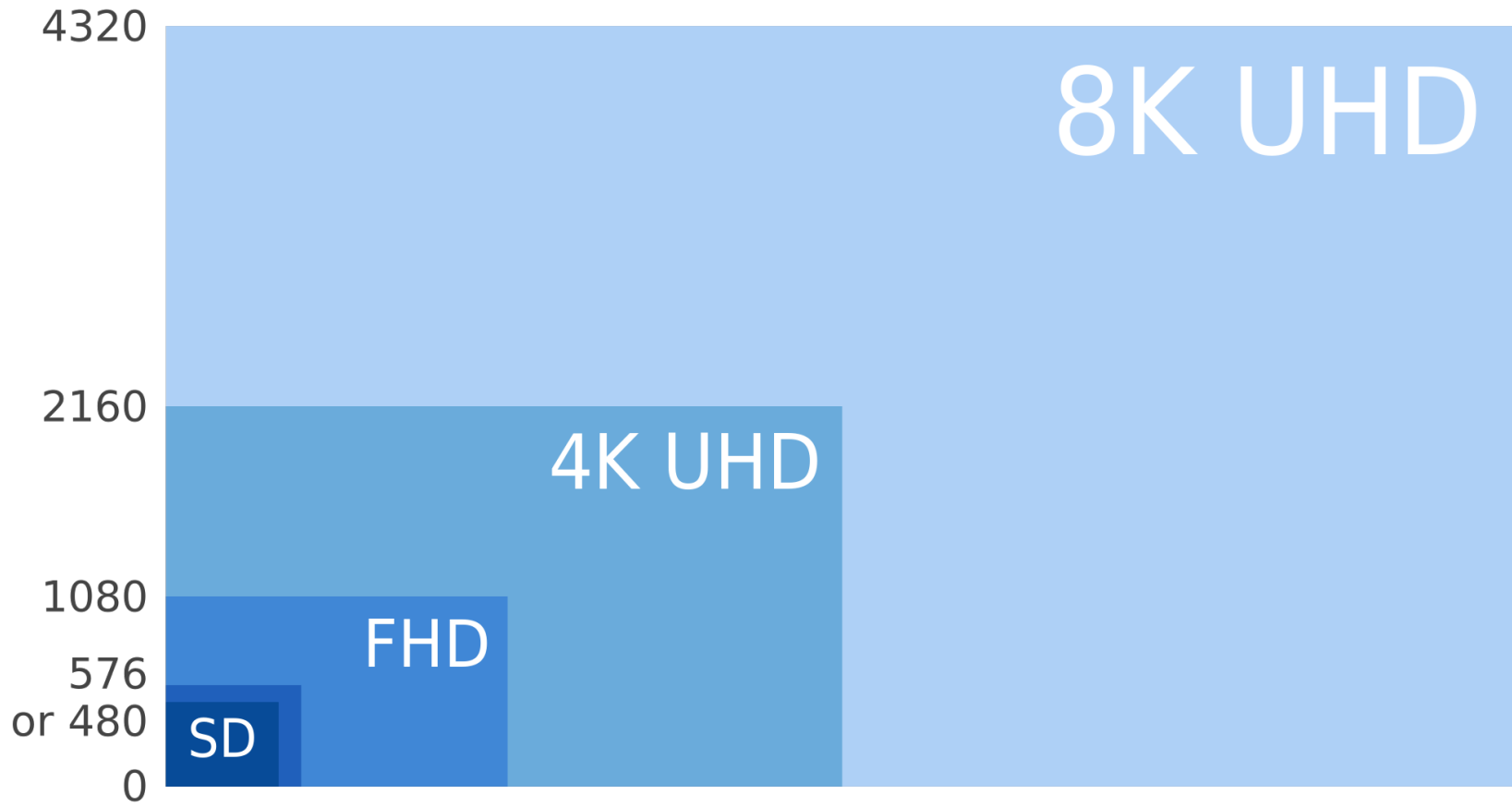


Compress Technology Constantly Evolving



Post/Broadcast compression data rates are much higher than consumer devices







Higher Resolutions = Higher Data Rates

	SD	1080i/1080p	UHD
Resolution	480x704	1080x1920	2160x3840
Frame size	480x704	~6 x SD	~25 x SD
Acquisition data rate	25 to 50 Mb/s	100 to 220 Mb/s	600Mb/s+
Data size vs SD	1x	4x to 5x	12x to 24x
Common codecs	DV/MPEG-2	H.264/ProRes	H.264/ProRes
1 Hour of Content	11 to 22 GB	45 to 100 GB	270+ GB

We need more bandwidth and more storage capacity as video resolution and quality improves

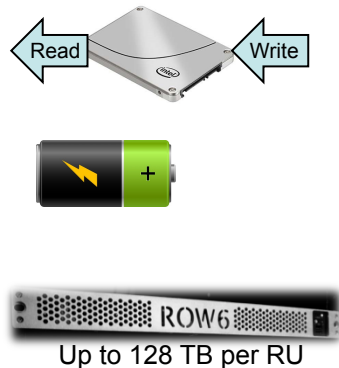


How Flash Memory Can Help

- Build flash memory shared storage:

Pros:

- Higher read and write performance
- Lower power consumption
- Potential for very dense storage solutions



Cons:

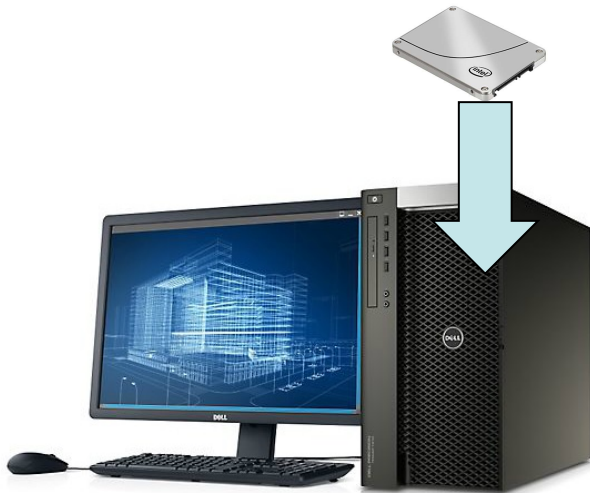
- Expensive





How Flash Memory Can Help

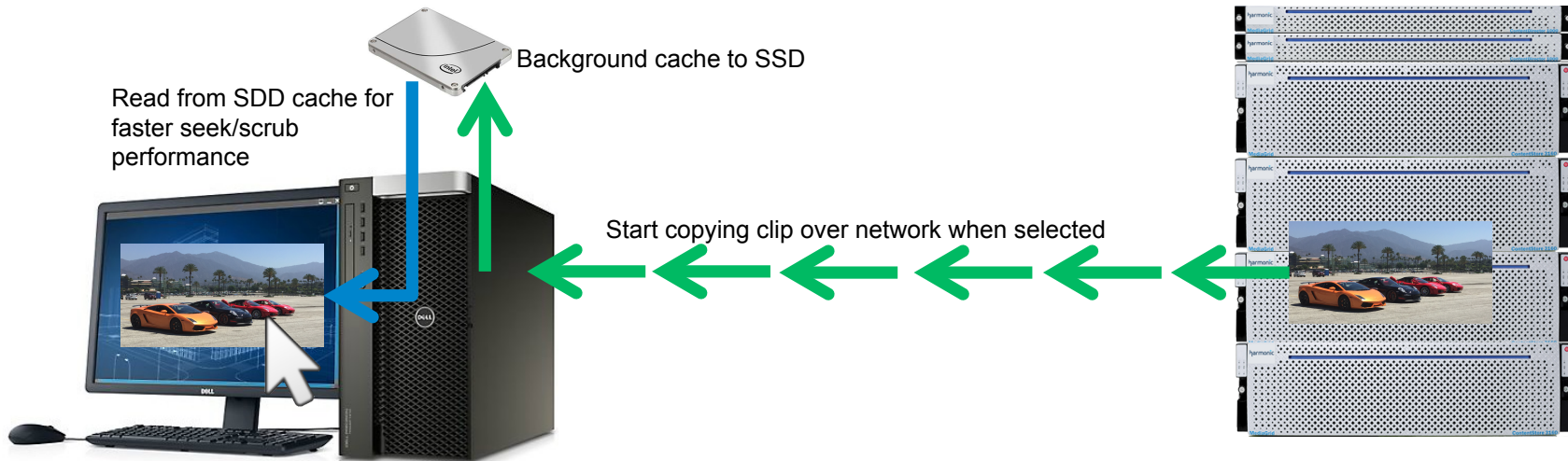
- Leverage flash memory in workstations:





How Flash Memory Can Help

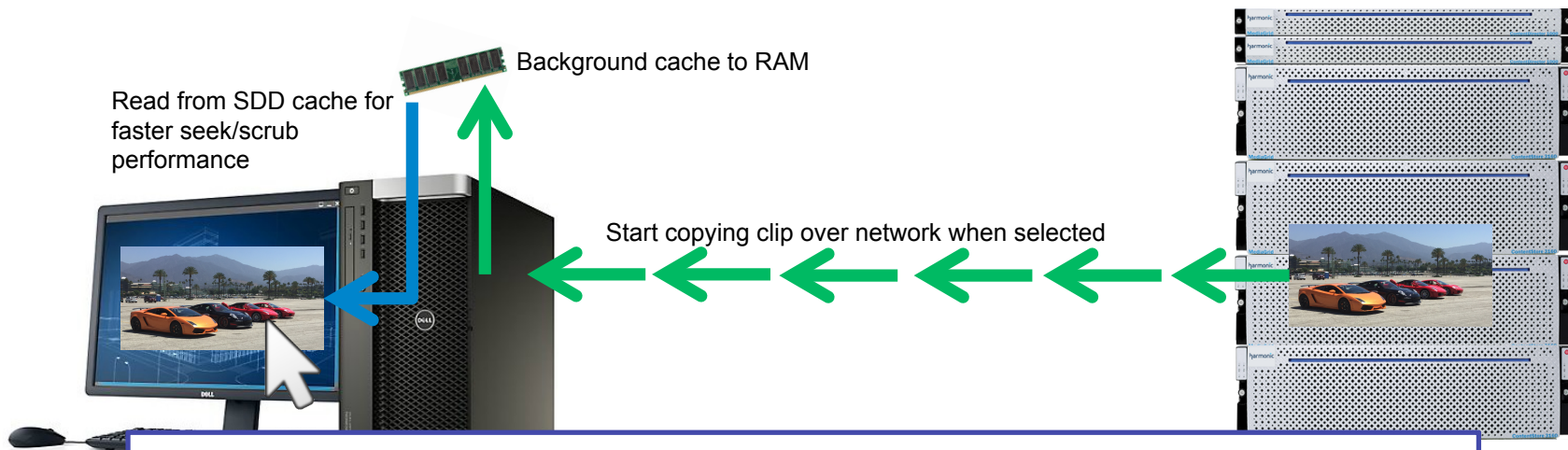
- Leverage flash memory in workstations:





If You Don't Have Flash Memory...

- Leverage RAM in workstations:



We can achieve the same effect with RAM, but with a much smaller cache size



The Roll Of Flash Based Memory

Flash memory is becoming increasingly important in post and broadcast content creation

Flash memory solutions are the storage medium of choice for removable media in cameras and related hardware

Generally, flash shared storage is future technology in Post Production and Broadcast

Flash memory for shared applications will be driven by growing bandwidth needs, where storage capacity is less important

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Thank you!

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Backup

4096x2160 4k

3840x2160 UHD