Qcow2 meeting 01/05/2020

A deeper look at the performance drop on long chains

Experiment:

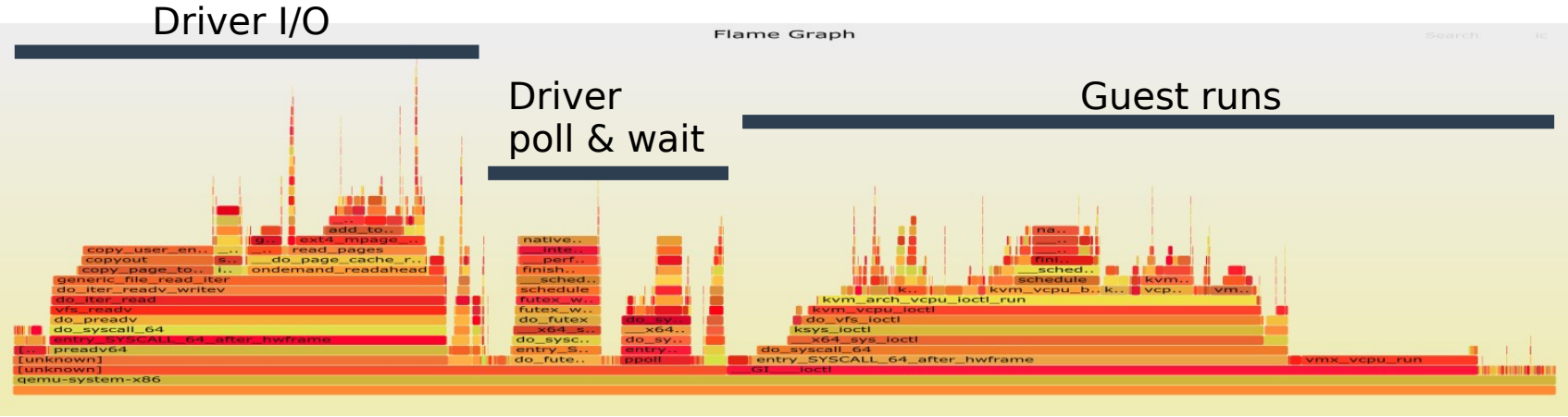
1. Boot VM on a disk with chain size = {1 | 300}
2. Read entire disk in the guest to populate qcow2 L1/L2 caches
3. Drop guest page cache so that subsequent accesses go to virtual disk
4. Read the entire disk again and profile the hypervisor during that operation

Chain size 1: 33 seconds

Chain size 300: 53 seconds

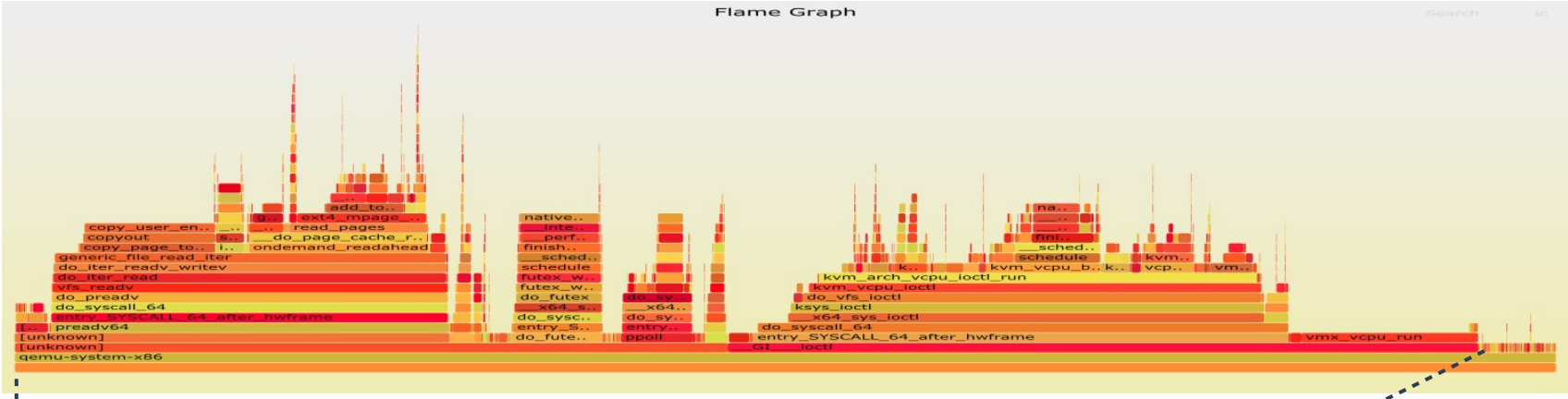
Reading the entire disk: profiling (perf) results

Chain size 1

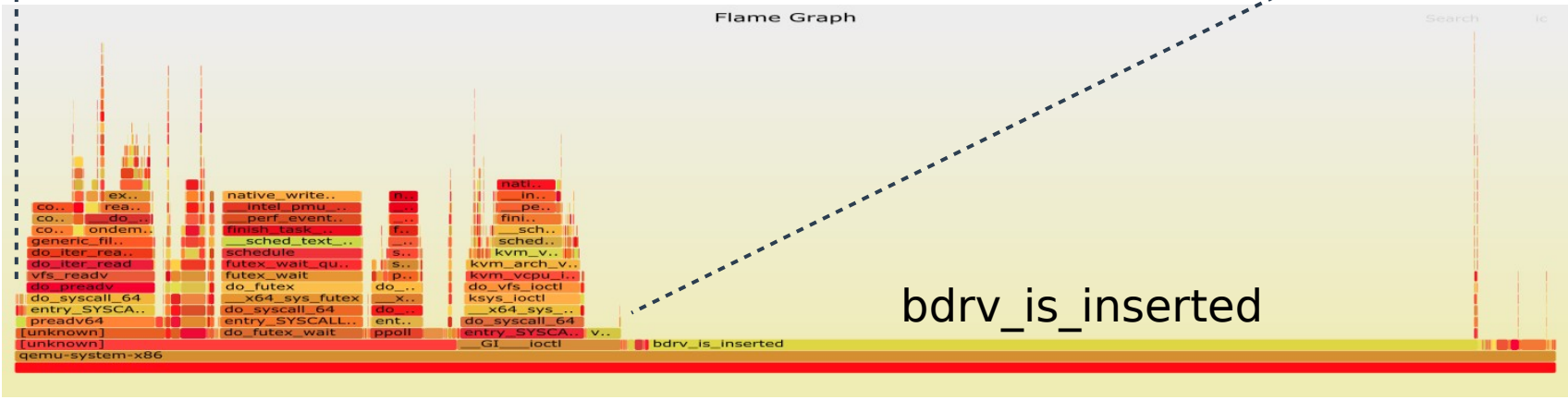


Reading the entire disk: profiling (perf) results

Chain size 1



Chain size 300

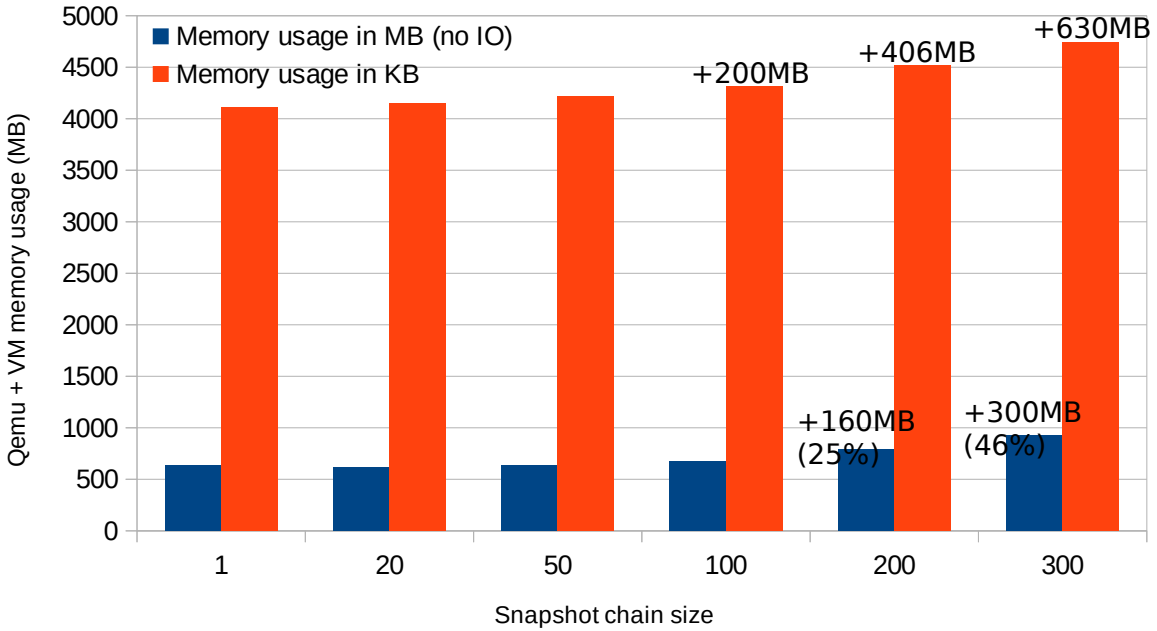


bdrv_is_inserted

Memory footprint with long chains

- Measure qemu's peak RSS when
1) simply booting then halting the VM → "No IO"
2) booting, reading entire disk, halting

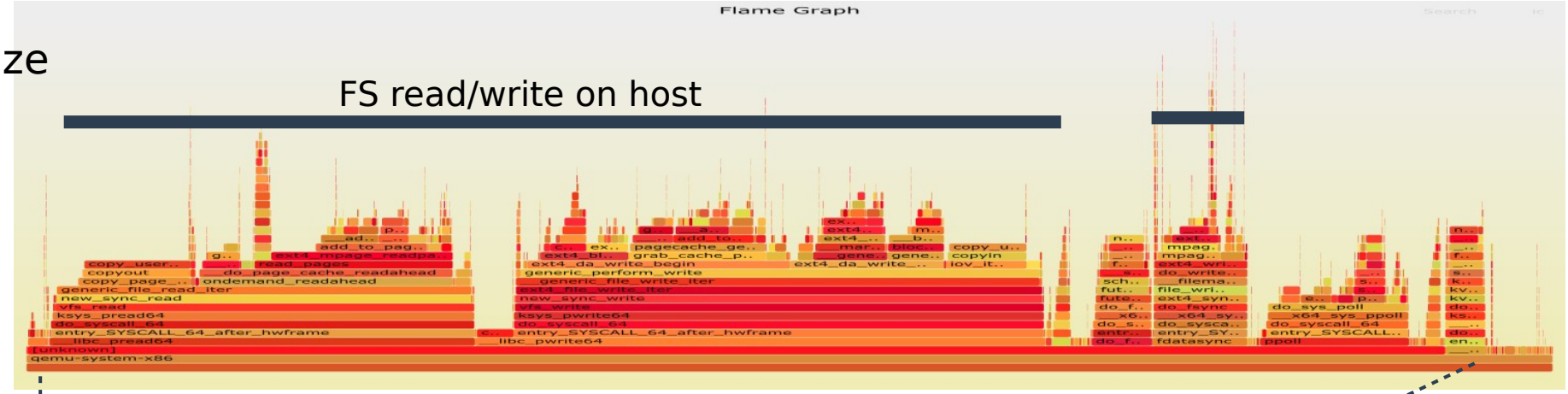
VM memory set to 4 GB



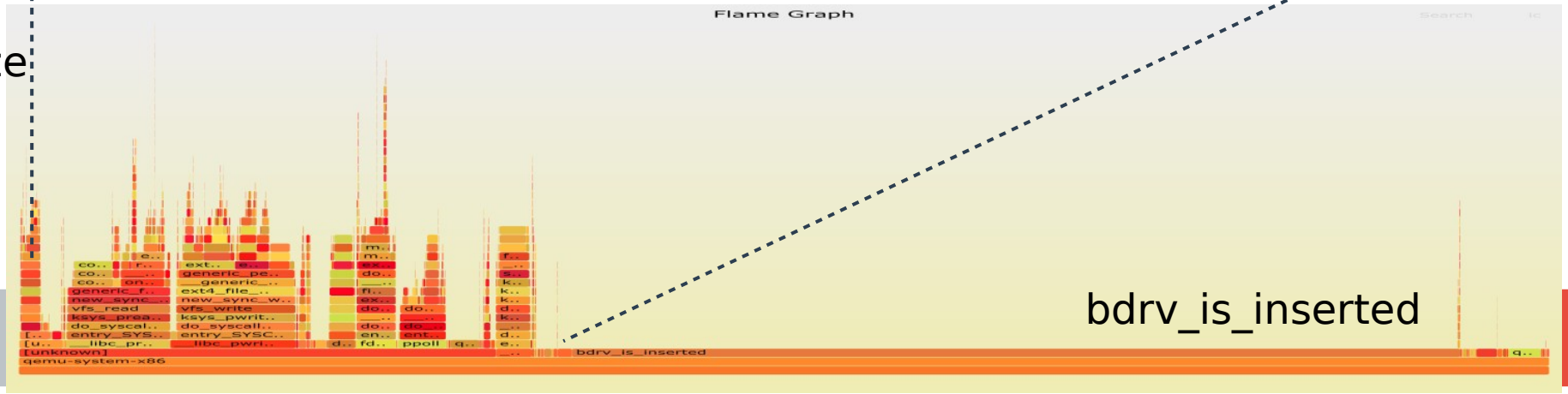
Streaming

1. **Boot VM on a chain of a given size**
2. **Stream all the chain, profiling with perf + measure peak RSS: 1→ 0.61 GB, 300 → 1.14 GB!**

Chain size 1



Chain size 300



bdrv_is_inserted

- Just seems to check for the presence of a block device

- Called a very high amount of times even with no snapshots

- loop recursive, loop iterations seem proportional to chain size

- still trying to figure out where it is called from...