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Memory persistence over kexec

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There are several efforts to support memory persistence over kexec:

- PKRAM [1]: Tmpfs-style filesystem which dynamically allocates memory which can be used for guest RAM and is preserved across kexec by passing a pointer to the root page.
- Kexec Hand Over (KHO) [2]: This is a generic mechanism to pass kernel state across kexec. It also supports specifying persisted memory page which could be used to carve out IOMMU pgtable pages from the new
+kernel's buddy allocator.
- Kernel memory pools [3, 4]: These provide a mechanism for kernel modules/drivers to allocate persistent memory, and restore that memory after kexec. They do not attempt to provide the ability to store
+userspace accessible state or have a filesystem interface
- Pkernfs [5] that attempted to solve guest memory persistence and IOMMU persistence all in one and guestmemfs [6] that is a re-work of that to only persist guest RAM in the filesystem, and to use KHO for
+filesystem metadata.

All these proposals address slightly different use-cases and it's highly desirable to decide how the solution that will work for all these use-cases should look.

Gathering all interested parties in one room and not letting them out for beers before they reach a consensus seems an obvious route to take in this situation.

- [1] <https://lore.kernel.org/kexec/1682554137-13938-1-git-send-email-anthony.yznaga@oracle.com/>
- [2] <https://lore.kernel.org/kexec/20231213000452.88295-1-graf@amazon.com/>
- [3] [https://lore.kernel.org/all/169645773092.11424.7258549771090599226.stgit@skinsburskii./](https://lore.kernel.org/all/169645773092.11424.7258549771090599226.stgit@skinsburskii/)
- [4] <https://lore.kernel.org/all/20231016233215.13090-1-madvenka@linux.microsoft.com>
- [5] <https://lore.kernel.org/all/20240205120203.60312-1-jgowans@amazon.com/>
- [6] <https://lore.kernel.org/linux-mm/20240805093245.889357-1-jgowans@amazon.com/>

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