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Restartable Sequences: Scaling Per-Core Shared Memory Use in Containers

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Introducing per-memory-space virtual CPU IDs allocation domains helps solving user-space per-core data structure memory scaling issues as long as the data structure is private to a memory space (typically a single process). However, this does not help in use-cases where the data structure sits in shared memory used across processes.

In order to address this part of the problem, a per-container virtual CPU ID domain would be useful. This raises some practical questions about where this belongs: either an existing namespace or a new "vcpu domain" namespace, and whether this type of domain should be nestable or not.

Reference: "Extending restartable sequences with virtual CPU IDs", https://lwn.net/Articles/885818/

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