Motivation

Security
…separate private from public memory

Isolation
…separate local from shared memory

Persistence
…enable memories with different life times

Linking
…enable merging of *any* modules

Scaling Out
…break 4G memory limit via segmentation

Recap

Allow multiple memory definitions, im/exports in a *single* module

Add memory index to all memory constructs (instructions, data segments)

Design canonical, filling intentional design gap

No changes since initial proposal

Proposal Status

prose spec :   ✓

formal spec :   ✓   Stage 2

interpreter :   ✓

tests :   ✓ (without bulk instructions)

JS API :   (not affected)

(unchanged for 3 months, no issues raised)

Recap: Open Question

Implementation: multiple memories typically require an extra indirection (some engines do that already)

Observed 3%-5% perf hit in SM, less in V8

No regression if keeping pinned register for memory 0

In the future, benefit from possible optimisation hints?

Good questions to investigate in stage 3!

Add additional extension hooks in binary format?

Poll

Stage 3?