Main Core (Assembly)	Invalidation	Monitoring Core
1: call malloc ;return pointer 0x12340000 in r1	1: rf_invalid[1] = false	1: rf_metadata[1] = (r1 << 32) | (r1 + 0xf) // = 0x123400001234000f

2: add r2, r1, #8	2: if (rf_invalid[1]) {
	// drop monitoring
	}
	rf_invalid[2] = rf_invalid[1]
		2: rf_metadata[2] = rf_metadata[1]

3a: mov r3, #1	3a: rf_invalid[3] = false	3a: rf_metadata[3] = NULL

3b: str r3, [r1, #12]
; store to 0x1234000c
	3b: if (rf_invalid[1] || rf_invalid[3]) {
	// drop monitoring
	}
	mem_invalid[0x12340007] = rf_invalid[3]
		3b: if (r1 + 12 < base(metadata[1]) ||
		r1 + 12 > bound(metadata[1])) {
		// raise error
		}
		mem_metadata[r1 + 12] = rf_metadata[3];

4: str r3, [r2, #12]
; store to 0x12340014
	4: if (rf_invalid[2] || rf_invalid[3]) {
	// drop monitoring
	}
	mem_invalid[0x1234000f] = rf_invalid[3]
		4: if (r2 + 12 < base(metadata[2]) ||
		r2 + 12 > bound(metadata[2])) {
		// raise error
		}
		mem_metadata[r2 + 12] = rf_metadata[3];