Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical Mag	gicUninitializedLexical

6 Constant 0x0

16 Goto  $\rightarrow$  block 2

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 1	
resumepoint 14 13 12 11 10 9 8	
7 OsrEntry	Pointer
8 Constant undefined	Undefined
9 OsrReturnValue ← OsrEntry#7	Value
10 Parameter THIS_SLOT	Value
11 Parameter 0	Value
12 OsrValue ← OsrEntry#7	Value
13 OsrValue ← OsrEntry#7	Value
14 OsrValue ← OsrEntry#7	Value
15 Start	
17 Goto → block 2	

# Block 2

resumepoint 24 23 22 21 20 19 18 18 Phi ← Constant#2, Constant#8 Undefined 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 23 Phi ← Constant#2, OsrValue#13 Value 24 Phi ← Constant#2, OsrValue#14 Value 32 Goto  $\rightarrow$  block 3

Int32

# Block 3 (loop header)

resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool

# Block 4 (backedge)

37 Test ← Compare#36 → block 4, block 5

resumepoint 31 30 29 28 27 26 25	
38 Constant magic uninitialized-lexical	MagicUninitializedLexical
39 Constant shape at 3fb4256fc20	Shape
40 NewPlainObject ← Constant#39	Object
41 Constant 0x0	Int32
42 Constant string 3fb4252d780	String
43 GuardShape ← NewPlainObject#40	Object
44 Elements ← GuardShape#43	Elements
45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42	
46 Constant 0x1	Int32
47 Constant string 3fb4252be60	String
48 GuardShape ← NewPlainObject#40	Object
49 Elements ← GuardShape#48	Elements
50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47	
51 Constant 0x1	Int32
52 GuardShape ← NewPlainObject#40	Object
53 Elements ← GuardShape#52	Elements
54 InitializedLength ← Elements#53	Int32
55 BoundsCheck $\leftarrow$ Constant#51, InitializedLength#54	Int32
56 SpectreMaskIndex $\leftarrow$ BoundsCheck#55, InitializedLength#54	Int32
57 LoadElement ← Elements#53, SpectreMaskIndex#56	Value
58 <u>Unbox Phi#29 to Int32 (fallible)</u>	Int32
59 Constant 0x1	Int32
60 Add ← Unbox#58, Constant#59 [int32]	Int32

# Block 5 resumepoint 31 30 29 28 27 26 25

# ./Benchmarkers/prop\_access.js:2 - Prune Unused Branches movable, guard, in worklist, recovered on bailout

D11- 0	
Block 0	resur
resumepoint 2 2 2 1 0 2 2	7 OsrE
0 Parameter THIS_SLOT Value	8 Const
1 Parameter 0 Value	9 OsrRe
2 Constant undefined Undefined	10 Paran
3 Start	11 Paran
4 CheckOverRecursed	12 OsrVa
5 Constant magic uninitialized-lexical MagicUninitializedLexical	13 OsrVa
6 Constant 0x0 Int32	14 OsrVa
16 Goto → block 2	15 Start
	17 Goto

Block 1	
resumepoint 14 13 12 11 10 9 8	_
OsrEntry	Pointer
Constant undefined	Undefined
OsrReturnValue ← OsrEntry#7	Value
Parameter THIS_SLOT	Value
Parameter 0	Value
OsrValue ← OsrEntry#7	Value
OsrValue ← OsrEntry#7	Value
OsrValue ← OsrEntry#7	Value
Start	
Goto → block 2	

Value

### Block 2 resumepoint 24 23 22 21 20 19 18 18 Phi ← Constant#2, Constant#8 Undefined 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 23 Phi ← Constant#2, OsrValue#13 Value

32 Goto  $\rightarrow$  block 3

24 Phi ← Constant#2, OsrValue#14

### Block 3 (loop header) resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool

37 Test  $\leftarrow$  Compare#36  $\rightarrow$  block 4, block 5

### Block 4 (backedge) resumepoint 31 30 29 28 27 26 25 38 Constant magic uninitialized-lexical MagicUninitializedLexical 39 Constant shape at 3fb4256fc20 Shape 40 NewPlainObject ← Constant#39 Object 41 Constant 0x0 Int32 42 Constant string 3fb4252d780 String 43 GuardShape ← NewPlainObject#40 Object 44 Elements ← GuardShape#43 Elements 45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42 46 Constant 0x1 Int32 47 Constant string 3fb4252be60 String 48 GuardShape $\leftarrow$ NewPlainObject#40 Object 49 Elements ← GuardShape#48 Elements 50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47 Int32 51 Constant 0x1 52 GuardShape ← NewPlainObject#40 Object 53 Elements ← GuardShape#52 Elements 54 InitializedLength $\leftarrow$ Elements#53 Int32 55 BoundsCheck ← Constant#51, InitializedLength#54 Int32 56 SpectreMaskIndex $\leftarrow$ BoundsCheck#55, InitializedLength#54 Int32 57 LoadElement ← Elements#53, SpectreMaskIndex#56 Value 58 Unbox Phi#29 to Int32 (fallible) Int32 59 Constant 0x1 Int32 60 Add ← Unbox#58, Constant#59 [int32] Int32

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 5 resumepoint 31 30 29 28 27 26 25 62 Return ← Phi#26

# ./Benchmarkers/prop\_access.js:2 - Fold Empty Blocks movable, guard, in worklist, recovered on bailout

Block 5

62 Return ← Phi#26

resumepoint 31 30 29 28 27 26 25

	movable, gua	ara, in worklist, recovered on ballout	
Block (		Block 1 resumepoint 14 13 12 11 10 9 8	
resumepoint 2 2 2 1 0 2 2		7 OsrEntry	Pointer
0 Parameter THIS_SLOT	Value	8 Constant undefined	Undefined
1 Parameter 0	Value	9 OsrReturnValue ← OsrEntry#7	Value
2 Constant undefined	Undefined	10 Parameter THIS_SLOT	Value
3 Start		11 Parameter 0	Value
4 CheckOverRecursed		12 OsrValue ← OsrEntry#7	Value
5 Constant magic uninitialized-lexi	cal MagicUninitializedLexical	13 OsrValue ← OsrEntry#7	Value
6 Constant 0x0	Int32	14 OsrValue ← OsrEntry#7	Value
16 Goto $\rightarrow$ block 2		15 Start	
		17 Goto → block 2	
	Block 2		
resumepoint 24 23 22 21 20 19 18			
	18 Phi ← Constant#2, Constan	t#8 Undefined	
	10 Dhi - Constant#2 OcrDotu	$rnV_0$ luo #0 Voluo	

### 19 Phi ← Constant#2, OsrReturnValue#9 Value Value 20 Phi ← Parameter#0, Parameter#10 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 23 Phi ← Constant#2, OsrValue#13 Value 24 Phi ← Constant#2, OsrValue#14 Value 32 Goto $\rightarrow$ block 3

### Block 3 (loop header) resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool 37 Test $\leftarrow$ Compare#36 $\rightarrow$ block 4, block 5

Block 4 (backedge)	
resumepoint 31 30 29 28 27 26 25	36 . 77 10 . 17
38 Constant magic uninitialized-lexical	MagicUninitializedLexical
39 Constant shape at 3fb4256fc20	Shape
40 NewPlainObject ← Constant#39	Object
41 Constant 0x0	Int32
42 Constant string 3fb4252d780	String
43 GuardShape ← NewPlainObject#40	Object
44 Elements ← GuardShape#43	Elements
45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42	2
46 Constant 0x1	Int32
47 Constant string 3fb4252be60	String
48 GuardShape ← NewPlainObject#40	Object
49 Elements ← GuardShape#48	Elements
50 StoreElementHole $\leftarrow$ GuardShape#48, Elements#49, Constant#46, Constant#4'	7
51 Constant 0x1	Int32
52 GuardShape ← NewPlainObject#40	Object
53 Elements ← GuardShape#52	Elements
54 InitializedLength ← Elements#53	Int32
55 BoundsCheck $\leftarrow$ Constant#51, InitializedLength#54	Int32
56 SpectreMaskIndex ← BoundsCheck#55, InitializedLength#54	Int32
57 <u>LoadElement ← Elements#53, SpectreMaskIndex#56</u>	Value
58 <u>Unbox Phi#29 to Int32 (fallible)</u>	Int32
59 Constant 0x1	Int32
60 Add ← Unbox#58, Constant#59 [int32]	Int32
61 Goto → block 3	

Block 0		resumepoin
resumepoint 2 2 2 1 0 2 2		7 OsrEntry
0 Parameter THIS_SLOT	Value	8 Constant ur
1 Parameter 0	Value	9 OsrReturnV
2 Constant undefined	Undefined	10 Parameter 7
3 Start		11 Parameter (
4 CheckOverRecursed		12 OsrValue ←
5 Constant magic uninitialized-lexical MagicUniniti	alizedLexical	13 OsrValue ←
6 Constant 0x0	Int32	14 OsrValue ←
16 Goto → block 2		15 Start
		17 Goto → bloc

Block 1	
resumepoint 14 13 12 11 10 9 8	_
7 OsrEntry	Pointer
8 Constant undefined	Undefined
9 OsrReturnValue ← OsrEntry#7	Value
10 Parameter THIS_SLOT	Value
11 Parameter 0	Value
12 OsrValue ← OsrEntry#7	Value
13 OsrValue ← OsrEntry#7	Value
14 OsrValue ← OsrEntry#7	Value
15 Start	
17 Goto → block 2	

# Block 2

resumepoint 24 23 22 21 20 19 18 18 Phi ← Constant#2, Constant#8 Undefined 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 23 Phi ← Constant#2, OsrValue#13 Value 24 Phi ← Constant#2, OsrValue#14 Value 32 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 31 30 29 28 27 26 25

25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool

# Block 4 (backedge)

37 Test  $\leftarrow$  Compare#36  $\rightarrow$  block 4, block 5

1
;
;
;

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 5 resumepoint 31 30 29 28 27 26 25 62 Return  $\leftarrow$  Phi#26

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical Mag	icUninitializedLexical
6 Constant 0x0	Int32
16 Goto → block 2	

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 1	
resumepoint 14 13 12 11 10 9 8	
7 OsrEntry	Pointer
8 Constant undefined	Undefined
9 OsrReturnValue ← OsrEntry#7	Value
10 Parameter THIS_SLOT	Value
11 Parameter 0	Value
12 OsrValue ← OsrEntry#7	Value
13 OsrValue ← OsrEntry#7	Value
14 OsrValue ← OsrEntry#7	Value
15 Start	
17 Goto → block 2	

Block 2 resumepoint 24 23 22 21 20 19 18 18 Phi ← Constant#2, Constant#8 Undefined 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value Value 22 Phi ← Constant#6, OsrValue#12 23 Phi ← Constant#2, OsrValue#13 Value 24 Phi ← Constant#2, OsrValue#14 Value

32 Goto  $\rightarrow$  block 3

Block 3 (loop header) resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool  $37 \text{ Test} \leftarrow \text{Compare} #36 \rightarrow \text{block } 4, \text{ block } 5$ 

Block 4 (backedge) resumepoint 31 30 29 28 27 26 25 38 Constant magic uninitialized-lexical MagicUninitializedLexical 39 Constant shape at 3fb4256fc20 Shape 40 NewPlainObject ← Constant#39 Object 41 Constant 0x0 Int32 42 Constant string 3fb4252d780 String 43 GuardShape ← NewPlainObject#40 Object 44 Elements ← GuardShape#43 Elements 45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42 46 Constant 0x1 Int32 47 Constant string 3fb4252be60 String 48 GuardShape ← NewPlainObject#40 Object 49 Elements ← GuardShape#48 Elements 50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47 Int32 51 Constant 0x1 52 GuardShape ← NewPlainObject#40 Object 53 Elements ← GuardShape#52 Elements 54 InitializedLength  $\leftarrow$  Elements#53 Int32 55 BoundsCheck ← Constant#51, InitializedLength#54 Int32 56 SpectreMaskIndex  $\leftarrow$  BoundsCheck#55, InitializedLength#54 Int32 57 LoadElement ← Elements#53, SpectreMaskIndex#56 Value 58 Unbox Phi#29 to Int32 (fallible) Int32 59 Constant 0x1 Int32 60 Add ← Unbox#58, Constant#59 [int32] Int32

Block 5
resumepoint 31 30 29 28 27 26 25
62 Return ← Phi#26

# ./Benchmarkers/prop\_access.js:2 - Split Critical Edges movable, guard, in worklist, recovered on bailout

Pointer

Value

Value Value Value Value Value

Undefined

movable, guard, in worklist, recovered on ballou			
		Block 1	
Block	0	resumepoint 14 13 12 11 10 9 8	
resumepoint 2 2 2 1 0 2 2		7 OsrEntry	
0 Parameter THIS_SLOT	Value	8 Constant undefined	
1 Parameter 0	Value	9 OsrReturnValue ← OsrEntry#7	
2 Constant undefined	Undefined	10 Parameter THIS_SLOT	
3 Start		11 Parameter 0	
4 CheckOverRecursed		12 OsrValue ← OsrEntry#7	
5 Constant magic uninitialized-lex	cical MagicUninitializedLexical	13 OsrValue ← OsrEntry#7	
6 Constant 0x0	Int32	14 OsrValue ← OsrEntry#7	
16 Goto → block 2		15 Start	
		17 Goto → block 2	
	Block 2	2.40.40	
	resumepoint 24 23 22 21 20	J 19 18	

### 18 Phi ← Constant#2, Constant#8 Undefined 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 23 Phi ← Constant#2, OsrValue#13 Value 24 Phi ← Constant#2, OsrValue#14 Value 32 Goto $\rightarrow$ block 3

### Block 3 (loop header) resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool 37 Test $\leftarrow$ Compare#36 $\rightarrow$ block 4, block 5

### Block 4 (backedge) resumepoint 31 30 29 28 27 26 25 38 Constant magic uninitialized-lexical MagicUninitializedLexical 39 Constant shape at 3fb4256fc20 Shape 40 NewPlainObject ← Constant#39 Object 41 Constant 0x0 Int32 42 Constant string 3fb4252d780 String 43 GuardShape ← NewPlainObject#40 Object 44 Elements ← GuardShape#43 Elements 45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42 46 Constant 0x1 Int32 47 Constant string 3fb4252be60 String 48 GuardShape ← NewPlainObject#40 Object 49 Elements ← GuardShape#48 Elements 50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47 Int32 51 Constant 0x1 52 GuardShape ← NewPlainObject#40 Object 53 Elements ← GuardShape#52 Elements 54 InitializedLength $\leftarrow$ Elements#53 Int32 55 BoundsCheck ← Constant#51, InitializedLength#54 Int32 56 SpectreMaskIndex $\leftarrow$ BoundsCheck#55, InitializedLength#54 Int32 57 LoadElement ← Elements#53, SpectreMaskIndex#56 Value 58 Unbox Phi#29 to Int32 (fallible) Int32 59 Constant 0x1 Int32 60 Add ← Unbox#58, Constant#59 [int32] Int32

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 5 resumepoint 31 30 29 28 27 26 25 62 Return ← Phi#26

# $./Benchmarkers/prop\_access.js: 2-Renumber\ Blocks$

movable, guard, in worklist, recovered on bailout

movable, <del>ga</del>	did, iii workiiot, iv
Block 0	resumepoin
resumepoint 2 2 2 1 0 2 2	7 OsrEntry
0 Parameter THIS_SLOT Value	8 Constant ur
1 Parameter 0 Value	9 OsrReturnV
2 Constant undefined Undefined	10 Parameter 7
3 Start	11 Parameter (
4 CheckOverRecursed	12 OsrValue ←
5 Constant magic uninitialized-lexical MagicUninitializedLexical	13 OsrValue ←
6 Constant 0x0 Int32	14 OsrValue ←
16 Goto → block 2	15 Start
	17 Goto → bloc
Block 2	

	Block 1	
	resumepoint 14 13 12 11 10 9 8	_
7	OsrEntry	Pointer
8	Constant undefined	Undefined
9	OsrReturnValue ← OsrEntry#7	Value
10	Parameter THIS_SLOT	Value
11	Parameter 0	Value
12	OsrValue ← OsrEntry#7	Value
13	OsrValue ← OsrEntry#7	Value
14	OsrValue ← OsrEntry#7	Value
15	Start	
17	Goto → block 2	

# resumepoint 24 23 22 21 20 19 18 18 Phi $\leftarrow$ Constant#2, Constant#8 Undefined 19 Phi $\leftarrow$ Constant#2, OsrReturnValue#9 Value 20 Phi $\leftarrow$ Parameter#0, Parameter#10 Value 21 Phi $\leftarrow$ Parameter#1, Parameter#11 Value 22 Phi $\leftarrow$ Constant#6, OsrValue#12 Value

23 Phi ← Constant#2, OsrValue#13 Value
24 Phi ← Constant#2, OsrValue#14 Value

32 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 31 30 29 28 27 26 25 25 Phi ← Phi#18, Phi#18 Value 26 Phi ← Phi#19, Phi#19 Value 27 Phi ← Phi#20, Phi#20 Value 28 Phi ← Phi#21, Phi#21 Value 29 Phi ← Phi#22, Add#60 Value 30 Phi ← Phi#23, NewPlainObject#40 Value 31 Phi ← Phi#24, LoadElement#57 Value 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#28 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool

Block 4 (backedge)

37 Test  $\leftarrow$  Compare#36  $\rightarrow$  block 4, block 5

resumepoint 31 30 29 28 27 26 25 38 Constant magic uninitialized-lexical MagicUninitializedLexical 39 Constant shape at 3fb4256fc20 Shape 40 NewPlainObject ← Constant#39 Object 41 Constant 0x0 Int32 42 Constant string 3fb4252d780 String 43 GuardShape ← NewPlainObject#40 Object 44 Elements ← GuardShape#43 Elements 45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42 46 Constant 0x1 Int32 47 Constant string 3fb4252be60 String 48 GuardShape ← NewPlainObject#40 Object 49 Elements ← GuardShape#48 Elements 50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47 Int32 51 Constant 0x1 52 GuardShape ← NewPlainObject#40 Object 53 Elements ← GuardShape#52 Elements 54 InitializedLength  $\leftarrow$  Elements#53 Int32 55 BoundsCheck ← Constant#51, InitializedLength#54 Int32 56 SpectreMaskIndex  $\leftarrow$  BoundsCheck#55, InitializedLength#54 Int32 57 LoadElement ← Elements#53, SpectreMaskIndex#56 Value 58 Unbox Phi#29 to Int32 (fallible) Int32 59 Constant 0x1 Int32

60 Add ← Unbox#58, Constant#59 [int32]

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

Block 5
resumepoint 31 30 29 28 27 26 25
62 Return ← Phi#26

Int32

# ./Benchmarkers/prop\_access.js:2 - Eliminate phis movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT Value	
1 Parameter 0 Value	
2 Constant undefined Undefined	
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical MagicUninitializedLexical	
6 Constant 0x0 Int32	
16 Goto → block 2	

resumepoint 64 64 29 21 20 19 64

55 BoundsCheck ← Constant#51, InitializedLength#54

57 LoadElement ← Elements#53, SpectreMaskIndex#56

58 Unbox Phi#29 to Int32 (fallible)

60 Add ← Unbox#58, Constant#59 [int32]

59 Constant 0x1

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

56 SpectreMaskIndex  $\leftarrow$  BoundsCheck#55, InitializedLength#54

64 Constant magic optimized-out

Block 1	
resumepoint 14 13 12 11 10 9 8	
7 OsrEntry	Pointer
8 Constant undefined	Undefined
9 OsrReturnValue ← OsrEntry#7	Value
10 Parameter THIS_SLOT	Value
11 Parameter 0	Value
12 OsrValue ← OsrEntry#7	Value
13 OsrValue ← OsrEntry#7	Value
14 OsrValue ← OsrEntry#7	Value
15 Start	
17 Goto → block 2	

MagicOptimizedOut

Int32

Int32

Value

Int32

Int32

Int32

	<u> </u>
Block 2	
resumepoint 66 66 22 21 20 19 66	
19 Phi ← Constant#2, OsrReturnValue#9	Value
20 Phi ← Parameter#0, Parameter#10	Value
21 Phi ← Parameter#1, Parameter#11	Value
22 Phi ← Constant#6, OsrValue#12	Value
66 Constant magic optimized-out	Magic Optimized Out
32 Goto → block 3	

# Block 3 (loop header) resumepoint 65 65 29 21 20 19 65 29 Phi ← Phi#22, Add#60 Value 65 Constant magic optimized-out MagicOptimizedOut 33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#21 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt 37 Test ← Compare#36 → block 4, block 5

### 38 Constant magic uninitialized-lexical MagicUninitializedLexical Shape 39 Constant shape at 3fb4256fc20 40 NewPlainObject ← Constant#39 Object Int32 41 Constant 0x0 42 Constant string 3fb4252d780 String 43 GuardShape ← NewPlainObject#40 Object 44 Elements ← GuardShape#43 Elements 45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42 46 Constant 0x1 Int32 47 Constant string 3fb4252be60 String 48 GuardShape ← NewPlainObject#40 Object 49 Elements ← GuardShape#48 Elements 50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47 51 Constant 0x1 Int32 52 GuardShape $\leftarrow$ NewPlainObject#40 Object 53 Elements ← GuardShape#52 Elements 54 InitializedLength ← Elements#53 Int32

Block 4 (backedge)

# Block 5

resumepoint 63 63 29 21 20 19 63

63 Constant magic optimized-out

MagicOptimizedOut

# ./Benchmarkers/prop\_access.js:2 - Iterator Indices movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT Value	
1 Parameter 0 Value	
2 Constant undefined Undefined	
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical MagicUninitializedLexical	
6 Constant 0x0 Int32	
16 Goto → block 2	

resumepoint 64 64 29 21 20 19 64

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

	Block 1	
	resumepoint 14 13 12 11 10 9 8	_
7	OsrEntry	Pointer
8	Constant undefined	Undefined
9	OsrReturnValue ← OsrEntry#7	Value
10	Parameter THIS_SLOT	Value
11	Parameter 0	Value
12	OsrValue ← OsrEntry#7	Value
13	OsrValue ← OsrEntry#7	Value
14	OsrValue ← OsrEntry#7	Value
15	Start	
17	Goto → block 2	

### Block 2 resumepoint 66 66 22 21 20 19 66 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 66 Constant magic optimized-out Magic Optimized Out32 Goto $\rightarrow$ block 3

### Block 3 (loop header) resumepoint 65 65 29 21 20 19 65 29 Phi ← Phi#22, Add#60 Value 65 Constant magic optimized-out Magic Optimized Out33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#21 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool 37 Test $\leftarrow$ Compare#36 $\rightarrow$ block 4, block 5

# Block 4 (backedge)

10041110401111 01 01 20 21 20 10 01	
64 Constant magic optimized-out	MagicOptimizedOut
38 Constant magic uninitialized-lexical	MagicUninitializedLexical
39 Constant shape at 3fb4256fc20	Shape
40 NewPlainObject ← Constant#39	Object
41 Constant 0x0	Int32
42 Constant string 3fb4252d780	String
43 GuardShape ← NewPlainObject#40	Object
44 Elements ← GuardShape#43	Elements
45 StoreElementHole $\leftarrow$ GuardShape#43, Elements#44, Constant#41, Constant#42	2
46 Constant 0x1	Int32
47 Constant string 3fb4252be60	String
48 GuardShape ← NewPlainObject#40	Object
49 Elements ← GuardShape#48	Elements
50 StoreElementHole $\leftarrow$ GuardShape#48, Elements#49, Constant#46, Constant#47	7
51 Constant 0x1	Int32
52 GuardShape ← NewPlainObject#40	Object
53 Elements ← GuardShape#52	Elements
54 InitializedLength ← Elements#53	Int32
55 BoundsCheck $\leftarrow$ Constant#51, InitializedLength#54	Int32
56 SpectreMaskIndex $\leftarrow$ BoundsCheck#55, InitializedLength#54	Int32
57 LoadElement ← Elements#53, SpectreMaskIndex#56	Value
58 <u>Unbox Phi#29 to Int32 (fallible)</u>	Int32
59 Constant 0x1	Int32
60 Add ← Unbox#58, Constant#59 [int32]	Int32

# Block 5

resumepoint 63 63 29 21 20 19 63

63 Constant magic optimized-out

Magic Optimized Out

# ./Benchmarkers/prop\_access.js:2 - Scalar Replacement movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT Value	
1 Parameter 0 Value	
2 Constant undefined Undefined	
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical MagicUninitializedLexical	
6 Constant 0x0 Int32	
16 Goto → block 2	

 $61 \text{ Goto} \rightarrow \text{block } 3$ 

	Block 1	
	resumepoint 14 13 12 11 10 9 8	_
7	OsrEntry	Pointer
8	Constant undefined	Undefined
9	OsrReturnValue ← OsrEntry#7	Value
10	Parameter THIS_SLOT	Value
11	Parameter 0	Value
12	OsrValue ← OsrEntry#7	Value
13	OsrValue ← OsrEntry#7	Value
14	OsrValue ← OsrEntry#7	Value
15	Start	
17	Goto → block 2	

### Block 2 resumepoint 66 66 22 21 20 19 66 19 Phi ← Constant#2, OsrReturnValue#9 Value 20 Phi ← Parameter#0, Parameter#10 Value 21 Phi ← Parameter#1, Parameter#11 Value 22 Phi ← Constant#6, OsrValue#12 Value 66 Constant magic optimized-out Magic Optimized Out32 Goto $\rightarrow$ block 3

### Block 3 (loop header) resumepoint 65 65 29 21 20 19 65 29 Phi ← Phi#22, Add#60 Value 65 Constant magic optimized-out Magic Optimized Out33 InterruptCheck 34 Unbox Phi#29 to Int32 (fallible) Int32 35 Unbox Phi#21 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool 37 Test $\leftarrow$ Compare#36 $\rightarrow$ block 4, block 5

# Block 4 (backedge)

resumepoint 64 64 29 21 20 19 64	
64 Constant magic optimized-out	MagicOptimizedOut
38 Constant magic uninitialized-lexical	MagicUninitializedLexical
39 Constant shape at 3fb4256fc20	Shape
40 NewPlainObject $\leftarrow$ Constant#39	Object
41 Constant 0x0	Int32
42 Constant string 3fb4252d780	String
43 GuardShape ← NewPlainObject#40	Object
44 Elements ← GuardShape#43	Elements
45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#42	
46 Constant 0x1	Int32
47 Constant string 3fb4252be60	String
48 GuardShape ← NewPlainObject#40	Object
49 Elements ← GuardShape#48	Elements
50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#47	'
51 Constant 0x1	Int32
52 GuardShape ← NewPlainObject#40	Object
53 Elements ← GuardShape#52	Elements
54 InitializedLength ← Elements#53	Int32
55 BoundsCheck ← Constant#51, InitializedLength#54	Int32
56 SpectreMaskIndex ← BoundsCheck#55, InitializedLength#54	Int32
57 LoadElement ← Elements#53, SpectreMaskIndex#56	Value
58 <u>Unbox Phi#29 to Int32 (fallible)</u>	Int32
59 Constant 0x1	Int32
$60 \text{ Add} \leftarrow \text{Unbox} #58, \text{Constant} #59 [int 32]$	Int32

# Block 5

resumepoint 63 63 29 21 20 19 63

63 Constant magic optimized-out

Magic Optimized Out

# ./Benchmarkers/prop\_access.js:2 - Apply types movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant magic uninitialized-lexical Ma	gicUninitializedLexical
6 Constant 0x0	Int32
67 Box ← Constant#2	Value
16 Goto $\rightarrow$ block 2	

Block 1	
resumepoint 14 13 12 11 10 9 8	
7 OsrEntry	Pointer
8 Constant undefined U	Undefined
9 OsrReturnValue ← OsrEntry#7	Value
10 Parameter THIS_SLOT	Value
11 Parameter 0	Value
12 OsrValue ← OsrEntry#7	Value
13 OsrValue ← OsrEntry#7	Value
14 OsrValue ← OsrEntry#7	Value
15 Start	
68 <u>Unbox OsrValue#12 to Int32 (fallible)</u>	Int32
17 Goto → block 2	

Block 2	
resumepoint 66 66 22 21 20 19 66	
19 Phi ← Box#67, OsrReturnValue#9	Value
20 Phi ← Parameter#0, Parameter#10	Value
21 Phi ← Parameter#1, Parameter#11	Value
22 Phi ← Constant#6, Unbox#68	Int32
66 Constant magic optimized-out	Magic Optimized Out
32 Goto → block 3	

### Block 3 (loop header) resumepoint 65 65 29 21 20 19 65 29 Phi ← Phi#22, Add#60 Int32 65 Constant magic optimized-out Magic Optimized Out33 InterruptCheck 69 Box ← Phi#29 Value 34 Unbox Box#69 to Int32 (fallible) Int32 35 Unbox Phi#21 to Int32 (fallible) Int32 36 Compare ← Unbox#34, Unbox#35 Lt Bool 37 Test $\leftarrow$ Compare#36 $\rightarrow$ block 4, block 5

Block 4 (backedge)	
resumepoint 64 64 29 21 20 19 64	_
64 Constant magic optimized-out	MagicOptimizedOut
38 Constant magic uninitialized-lexical	Magic Uninitial ized Lexical
39 Constant shape at 3fb4256fc20	Shape
40 NewPlainObject ← Constant#39	Object
41 Constant 0x0	Int32
42 Constant string 3fb4252d780	String
43 GuardShape ← NewPlainObject#40	Object
44 Elements ← GuardShape#43	Elements
45 StoreElementHole ← GuardShape#43, Elements#44, Constant#41, Constant#4	2
46 Constant 0x1	Int32
47 Constant string 3fb4252be60	String
48 <u>GuardShape ← NewPlainObject#40</u>	Object
49 Elements ← GuardShape#48	Elements
50 StoreElementHole ← GuardShape#48, Elements#49, Constant#46, Constant#4	7
51 Constant 0x1	Int32
52 <u>GuardShape ← NewPlainObject#40</u>	Object
53 Elements ← GuardShape#52	Elements
54 InitializedLength ← Elements#53	Int32
55 BoundsCheck $\leftarrow$ Constant#51, InitializedLength#54	Int32
56 SpectreMaskIndex ← BoundsCheck#55, InitializedLength#54	Int32
57 LoadElement ← Elements#53, SpectreMaskIndex#56	Value
70 Box ← Phi#29	Value
58 <u>Unbox Box#70 to Int32 (fallible)</u>	Int32
59 Constant 0x1	Int32
60 Add ← Unbox#58, Constant#59 [int32]	Int32
61 Goto → block 3	

# Block 5 resumepoint 63 63 29 21 20 19 63 63 Constant magic optimized-out MagicOptimizedOut 62 Return ← Phi#19

	m	ovable, guard, in worklist, recovered or	n bailout
		Block 1	
Parameter THIS_SLOT Parameter 0 Constant undefined Start CheckOverRecursed	Value Value Undefined  ed-lexical MagicUninitializedLexical	resumepoint 16 15 14 13 12 11 10 9 OsrEntry 10 Constant undefined 11 OsrReturnValue ← OsrEntry#9 12 Parameter THIS_SLOT 13 Parameter 0 14 OsrValue ← OsrEntry#9 15 OsrValue ← OsrEntry#9	Pointer Undefined Value Value Value Value Value
Constant 0x0	Int32	16 OsrValue ← OsrEntry#9	Value
Box ← Constant#2 Goto → block 2	Value	17 Start 18 <u>Unbox OsrValue#14 to Int32 (falli</u>	ble) Int32
		19 Goto → block 2	
	Block 2		
	resumepoint 24 24 23 22 21 2 20 Phi ← Box#7, OsrReturnValue 21 Phi ← Parameter#0, Paramete 22 Phi ← Parameter#1, Paramete 23 Phi ← Constant#6, Unbox#18 24 Constant magic optimized-out 25 Goto → block 3	v#11 Value er#12 Value er#13 Value Int32	
	Block 3 (loop	header)	
	resumepoint 27 27 26 22 21 20 26 Phi ← Phi#23, Add#58 27 Constant magic optimized-out 28 InterruptCheck	Int32 MagicOptimizedOut	
	29 Box ← Phi#26	Value	
	30 <u>Unbox Box#29 to Int32 (fallible</u> 31 <u>Unbox Phi#22 to Int32 (fallible</u>		
	32 Compare ← Unbox#30, Unbox#	#31 Lt Bool	
	33 Test ← Compare#32 → block 4,	block 5	
	1 7		0
	Block 4 (backed	ge)	
resumepoint 34 34 20 34 Constant magic optin 35 Constant magic unini 36 Constant shape at 3fl 37 NewPlainObject ← Co	nized-out itialized-lexical b4256fc20	MagicOptin MagicUninitialize	
38 Constant 0x0 39 Constant string 3fb42	2524700		Int32
40 GuardShape ← NewP			String Object
memory 17 41 Elements ← GuardSh memory 33	ape#40		Elements
	GuardShape#40, Elements#41, Cons	tant#38, Constant#39	T
43 Constant 0x1 44 Constant string 3fb42	252be60		Int32 String
45 GuardShape ← NewP	lainObject#37		Object
memory 17 46 Elements ← GuardSh memory 42			Elements
47 StoreElementHole ← 48 Constant 0x1	GuardShape#45, Elements#46, Cons	tant#43, Constant#44	Int32
49 <u>GuardShape ← NewP</u>	lainObject#37		Object
memory 17 <b>50 Elements ← GuardSh</b> memory 47	ape#49		Elements
51 InitializedLength ← E	Elements#50		Int32
memory 47 52 BoundsCheck ← Cons	stant#48, InitializedLength#51		Int32
53 SpectreMaskIndex ←	BoundsCheck#52, InitializedLength# ents#50, SpectreMaskIndex#53	51	Int32 Value
memorv 47			The second secon
memory 47 55 Box ← Phi#26			Value
b and a second s			Value Int32 Int32 Int32

Block 5
resumepoint 60 60 26 22 21 20 60
60 Constant magic optimized-out
61 Return ← Phi#20

Block 5
MagicOptimizedOut

		Block	k 1
Blo	ock 0	resumepoint 16 15 14 1	
resumepoint 2 2 2 1 0 2 2		9 OsrEntry	Pointer
Parameter THIS_SLOT Parameter 0	Value	10 Constant undefined	Undefined
Parameter 0 Constant undefined	Value Undefined	11 OsrReturnValue ← OsrE 12 Parameter THIS SLOT	ntry#9 Value Value
Start	Ondermied	13 Parameter 0	Value
CheckOverRecursed		14 OsrValue ← OsrEntry#9	
Constant magic uninitialized	-lexical MagicUninitializedLexical	15 OsrValue ← OsrEntry#9	
Constant 0x0	Int32	16 OsrValue ← OsrEntry#9	Value
Box ← Constant#2	Value	17 Start	T 100 (C 11:11 ) T 100
Goto → block 2		18 <u>Unbox OsrValue#14 to 1</u> 19 Goto → block 2	<u>Int32 (fallible)</u> Int32
		19 G0t0 → D10Ck 2	
	Block 2	2	
	resumepoint 24 24 23 22 21 2		
	20 Phi ← Box#7, OsrReturnValue	e#11 Value	
	21 Phi ← Parameter#0, Paramet	er#12 Value	
	22 Phi ← Parameter#1, Paramet		
	23 Phi ← Constant#6, Unbox#18		
	24 Constant magic optimized-out	t MagicOptimizedOut	
	25 Goto → block 3		
	Block 3 (loop	header)	
	resumepoint 27 27 26 22 21 20		
	26 Phi ← Phi#23, Add#58	Int32	
	27 Constant magic optimized-out	MagicOptimizedOut	
	28 InterruptCheck	Volue	
	29 Box ← Phi#26 30 <u>Unbox Box#29 to Int32 (fallible</u>	Value <u>e)</u>	
	31 Unbox Phi#22 to Int32 (fallible		
	$32 \text{ Compare} \leftarrow \text{Unbox} #30, \text{Unbox}$		
	33 Test $\leftarrow$ Compare#32 $\rightarrow$ block 4,		
	$\downarrow^1$		0
	Block 4 (backed	.ge)	
resumepoint 34 34 26 2		,	
34 Constant magic optimized 35 Constant magic uninities			MagicOptimizedOut UninitializedLexical
36 Constant shape at 3fb4		Magic	Shape
50 Constant shape at 5151	12001020		onape
37 NewPlainObject ← Con	stant#36		Object
37 NewPlainObject ← Con 38 Constant 0x0	stant#36		Object Int32
			•
38 Constant 0x0	52d780		Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17	52d780 inObject.#37		Int32 String Object
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap	52d780 inObject.#37		Int32 String
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33	52d780 inObject#37 pe#40	tant#38 Constant#30	Int32 String Object
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G	52d780 inObject.#37	stant#38, Constant#39	Int32 String Object Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1	52d780 inObject#37 pe#40 uardShape#40, Elements#41, Cons	stant#38, Constant#39	Int32 String Object Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G	52d780 inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60	stant#38, Constant#39	Int32 String Object Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425	52d780 inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60	stant#38, Constant#39	Int32 String Object Elements Int32 String
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPla	inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60 inObject#37	stant#38, Constant#39	Int32 String Object Elements Int32 String
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPla memory 17 46 Elements ← GuardShap memory 42	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37		Int32 String Object  Elements  Int32 String Object
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G	inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60 inObject#37		Int32 String Object  Elements  Int32 String Object  Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1	52d780 inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60 inObject#37 pe#45 uardShape#45, Elements#46, Cons		Int32 String Object  Elements  Int32 String Object Elements  Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 49	52d780 inObject#37 pe#40 uardShape#40, Elements#41, Cons 52be60 inObject#37 pe#45 uardShape#45, Elements#46, Cons		Int32 String Object  Elements  Int32 String Object  Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17	inObject#37  pe#40  uardShape#40, Elements#41, Cons  2be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37		Int32 String Object  Elements  Int32 String Object Elements  Int32 Object
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 49	inObject#37  pe#40  uardShape#40, Elements#41, Cons  2be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37		Int32 String Object  Elements  Int32 String Object Elements  Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShape 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17	inObject#37  pe#40  uardShape#40, Elements#41, Cons  2be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49		Int32 String Object  Elements  Int32 String Object Elements  Int32 Object
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapememory 47 51 InitializedLength ← Elememory 47	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50		Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← GuardShapememory 35 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← GuardShapememory 47 50 Elements ← GuardShapememory 17 50 Elements ← GuardShapememory 47 51 InitializedLength ← Elememory 47 52 BoundsCheck ← Constant	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapememory 47 51 InitializedLength ← Elememory 47 52 BoundsCheck ← Constant 53 SpectreMaskIndex ← B	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51 boundsCheck#52, InitializedLength#	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Int32 Int32 Int32 Int32 Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapememory 47 51 InitializedLength ← Elementy 47 52 BoundsCheck ← Constant 53 SpectreMaskIndex ← B 54 LoadElement ← Elementy ← El	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Int32 Int32 Int32 Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPla memory 17 41 Elements ← GuardShap memory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPla memory 17 46 Elements ← GuardShap memory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPla memory 17 50 Elements ← GuardShap memory 47 51 InitializedLength ← Elementy memory 47 52 BoundsCheck ← Consta 53 SpectreMaskIndex ← B 54 LoadElement ← Elementy memory 47	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51 boundsCheck#52, InitializedLength#	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Int32 Value
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapmemory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapmemory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapmemory 47 51 InitializedLength ← Elementy 47 52 BoundsCheck ← Constant 53 SpectreMaskIndex ← B 54 LoadElement ← Elementememory 47 55 Box ← Phi#26	inObject#37  pe#40  uardShape#40, Elements#41, Cons  2be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51  coundsCheck#52, InitializedLength# ats#50, SpectreMaskIndex#53	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Value Value
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapememory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapememory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapememory 47 51 InitializedLength ← Elementemory 47 52 BoundsCheck ← Constant 53 SpectreMaskIndex ← B 54 LoadElement ← Elementemory 47 55 Box ← Phi#26 56 Unbox Box#55 to Int32	inObject#37  pe#40  uardShape#40, Elements#41, Cons  2be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51  coundsCheck#52, InitializedLength# ats#50, SpectreMaskIndex#53	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Value Value Int32
38 Constant 0x0 39 Constant string 3fb425 40 GuardShape ← NewPlamemory 17 41 Elements ← GuardShapmemory 33 42 StoreElementHole ← G 43 Constant 0x1 44 Constant string 3fb425 45 GuardShape ← NewPlamemory 17 46 Elements ← GuardShapmemory 42 47 StoreElementHole ← G 48 Constant 0x1 49 GuardShape ← NewPlamemory 17 50 Elements ← GuardShapmemory 47 51 InitializedLength ← Elementy 47 52 BoundsCheck ← Constant 53 SpectreMaskIndex ← B 54 LoadElement ← Elementememory 47 55 Box ← Phi#26	inObject#37  pe#40  uardShape#40, Elements#41, Cons  22be60 inObject#37  pe#45  uardShape#45, Elements#46, Cons inObject#37  pe#49  ements#50  ant#48, InitializedLength#51  coundsCheck#52, InitializedLength# ats#50, SpectreMaskIndex#53  2 (fallible)	stant#43, Constant#44	Int32 String Object  Elements  Int32 String Object Elements  Int32 Object Elements  Int32 Value  Value

Block 5 resumepoint 60 60 26 22 21 20 60 60 Constant magic optimized-out 61 Return ← Phi#20 Magic Optimized Out

# /Benchmarkers/prop\_access.js:2 - GVN vable, guard, in worklist, recovered on bailout

	mo	./Benchmarker vable, guard, in
Block 0 resumepoint 2 2 2 1 0 2 2 0 Parameter THIS_SLOT 1 Parameter 0 2 Constant undefined 3 Start 4 CheckOverRecursed 6 Constant 0x0 7 Box ← Constant#2 8 Goto → block 2	Value Value Undefined Int32 Value	resumepoir  9 OsrEntry  10 Constant u  11 OsrReturn  12 Parameter  13 Parameter  14 OsrValue ←  15 OsrValue ←  16 OsrValue ←  17 Start  18 Unbox Osr  19 Goto → block
20 Phi ← Bo 21 Phi ← Par 22 Phi ← Par 23 Phi ← Co	oint 24 24 23 2 x#7, OsrRetur rameter#0, Par rameter#1, Par nstant#6, Unb magic optimiz	nValue#11 rameter#12 rameter#13 ox#18

Block 1	
resumepoint 16 15 14 13 12 11 10	
9 OsrEntry	Pointer
10 Constant undefined	Undefined
11 OsrReturnValue ← OsrEntry#9	Value
12 Parameter THIS_SLOT	Value
13 Parameter 0	Value
14 OsrValue ← OsrEntry#9	Value
15 OsrValue ← OsrEntry#9	Value
16 OsrValue ← OsrEntry#9	Value
17 Start	
18 <u>Unbox OsrValue#14 to Int32 (fallible)</u>	Int32
19 Goto → block 2	

Value Value Value Int32 gicOptimizedOut

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58 Int32

28 InterruptCheck

31 Unbox Phi#22 to Int32 (fallible) Int32

32 Compare ← Phi#26, Unbox#31 Lt Bool

33 Test ← Compare#32 → block 4, block 5

# Block 4 (backedge)

resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical Magic Uninitialized Lexical36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject ← Constant#36 Object 38 Constant 0x0 Int32 39 Constant string 3fb4252d780 String 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 Int32

memory 42

47 StoreElementHole  $\leftarrow$  GuardShape#40, Elements#46, Constant#43, Constant#44 50 Elements ← GuardShape#40 Elements memory 47

51 InitializedLength  $\leftarrow$  Elements#50 memory 47

44 Constant string 3fb4252be60

46 Elements ← GuardShape#40

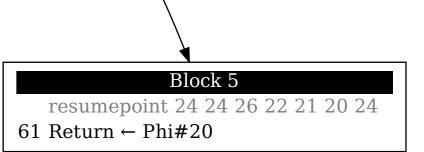
52 BoundsCheck ← Constant#43, InitializedLength#51

53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength#51 Int32 Value

54 LoadElement ← Elements#50, SpectreMaskIndex#53 memory 47

58 Add ← Phi#26, Constant#43 [int32]

59 Goto → block 3



String

Int32

Int32

Int32

Elements

# ./Benchmarkers/prop\_access.js:2 - LICM movable, guard, in worklist, recovered on bailout

resumepoint 16 15 14 13 12 11 10

Block 1

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

Block 0 resumepoint 2 2 2 1 0 2 2 0 Parameter THIS_SLOT Value 1 Parameter 0 Value 2 Constant undefined Undefined 3 Start 4 CheckOverRecursed	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ed ue ue ue
6 Constant 0x0 Int32	15 OsrValue ← OsrEntry#9 Val	
7 Box ← Constant#2 Value	16 OsrValue ← OsrEntry#9 Val 17 Start	ue
8 Goto → block 2	18 <u>Unbox OsrValue#14 to Int32 (fallible)</u> Int 19 Goto → block 2	32
	Block 2	
resumepoint 24 24 23		
20 Phi ← Box#7, OsrRetu 21 Phi ← Parameter#0, Pa		
22 Phi ← Parameter#1, Pa		
23 Phi ← Constant#6, Uni		
24 Constant magic optimi 31 <u>Unbox Phi#22 to Int32</u>		
$25 \text{ Goto} \rightarrow \text{block } 3$	2 (fallible) Int32	
	3 (loop header)	
resumepoint 24 2 26 Phi ← Phi#23, Ac	24 26 22 21 20 24 ld#58	
28 InterruptCheck	10#30	
32 Compare ← Phi#	26, Unbox#31 Lt Bool	
33 Test ← Compare	#32 → block 4, block 5	
		0
Block 4 (	backedge)	
resumepoint 24 24 26 22 21 20 24	Ma mi al Indinitialia a di ann	: 1
35 Constant magic uninitialized-lexical 36 Constant shape at 3fb4256fc20	MagicUninitializedLex Sha	ape
37 NewPlainObject ← Constant#36		ject
38 Constant 0x0		t32
39 Constant string 3fb4252d780 40 GuardShape ← NewPlainObject#37		ring
memory 17	Obj	ject
41 Elements ← GuardShape#40		
	Eleme	nts
memory 33		ents
42 StoreElementHole ← GuardShape#40, Elements#42	I, Constant#38, Constant#39	
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1	I, Constant#38, Constant#39 In	ents t32 ring
42 StoreElementHole ← GuardShape#40, Elements#42	I, Constant#38, Constant#39 In	t32 ring
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42	I, Constant#38, Constant#39 In Str Eleme	t32 ring
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46	I, Constant#38, Constant#39 In Str Eleme 5, Constant#43, Constant#44	t32 ring ents
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40	I, Constant#38, Constant#39 In Str Eleme	t32 ring ents
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46	I, Constant#38, Constant#39  In Str Eleme 5, Constant#43, Constant#44  Eleme	t32 ring ents
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40 memory 47 51 InitializedLength ← Elements#50 memory 47	I, Constant#38, Constant#39  In Str Eleme  6, Constant#43, Constant#44  Eleme In	t32 ring ents ents
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40 memory 47 51 InitializedLength ← Elements#50 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51	I, Constant#38, Constant#39  In Str Eleme  6, Constant#43, Constant#44  Eleme  In	t32 ring ents ents t32
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40 memory 47 51 InitializedLength ← Elements#50 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51 53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength	I, Constant#38, Constant#39  In Str Eleme  5, Constant#43, Constant#44  Eleme  In In In	t32 ring rnts t32 t32 t32
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40 memory 47 51 InitializedLength ← Elements#50 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51	I, Constant#38, Constant#39  In Str Eleme  5, Constant#43, Constant#44  Eleme  In In In	t32 ring ents ents t32
42 StoreElementHole ← GuardShape#40, Elements#43 43 Constant 0x1 44 Constant string 3fb4252be60 46 Elements ← GuardShape#40 memory 42 47 StoreElementHole ← GuardShape#40, Elements#46 50 Elements ← GuardShape#40 memory 47 51 InitializedLength ← Elements#50 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51 53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength#54 54 LoadElement ← Elements#50, SpectreMaskIndex#5	I, Constant#38, Constant#39  In Str Eleme  5, Constant#43, Constant#44  Eleme  In In In Va	t32 ring rnts t32 t32 t32

# ./Benchmarkers/prop\_access.js:2 - Beta movable, guard, in worklist, recovered on bailout

	Block 1
Block 0	resumepoint 16 15 14 13 12 11 10
resumepoint 2 2 2 1 0 2 2	9 OsrEntry Pointer
0 Parameter THIS SLOT Value	10 Constant undefined Undefined
1 Parameter 0 Value	11 OsrReturnValue ← OsrEntry#9 Value
2 Constant undefined Undefined	12 Parameter THIS_SLOT Value 13 Parameter 0 Value
3 Start	$\begin{array}{ccc} 13 \text{ Parameter 0} & \text{Value} \\ 14 \text{ OsrValue} \leftarrow \text{OsrEntry#9} & \text{Value} \end{array}$
4 CheckOverRecursed	14 Osi Value ← Osi Entry#9 Value 15 OsrValue ← OsrEntry#9 Value
6 Constant 0x0 Int32	16 OsrValue ← OsrEntry#9 Value 16 OsrValue ← OsrEntry#9
$7 \text{ Box} \leftarrow \text{Constant#2}$ Value	17 Start
8 Goto → block 2	18 <u>Unbox OsrValue#14 to Int32 (fallible)</u> Int32
	$19 \text{ Goto} \rightarrow \text{block } 2$
	slock 2
resumepoint 24 24 23 2	
20 Phi ← Box#7, OsrReturr	
21 Phi ← Parameter#0, Par	
22 Phi ← Parameter#1, Par	
23 Phi ← Constant#6, Unbo	
24 Constant magic optimize 31 Unbox Phi#22 to Int32	
31 Onbox Pm#22 to mt.52 25 Goto → block 3	(fallible) Int32
25 GOLO - DIOCK 5	
Block 3	(loop header)
resumepoint 24 24	1 26 22 21 20 24
26 Phi ← Phi#23, Add	l#58 Int32
28 InterruptCheck	
32 Compare ← Phi#2	6, Unbox#31 Lt Bool
33 Test ← Compare#3	22 - blook 4 blook 5
	52 → DIOCK 4, DIOCK 5
$\sqrt{1}$	0
Block 4 (ba	0
Block 4 (baresumepoint 24 24 71 22 21 20 24	ackedge)
Block 4 (barresumepoint 24 24 71 22 21 20 24 72 Beta ← Unbox#31 I[-2147483647, 2147483647]	ackedge)  Int32
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]	Int32 Int32
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical	Int32 Int32 MagicUninitializedLexical
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20	Int32 Int32 Int32 MagicUninitializedLexical Shape
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36	Int32 Int32 Int32 MagicUninitializedLexical Shape Object
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40	Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33	Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,	Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements Constant#38, Constant#39
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements Constant#38, Constant#39 Int32
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37 memory 17  41 Elements ← GuardShape#40 memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40 memory 42	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,	Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37 memory 17  41 Elements ← GuardShape#40 memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40 memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40 memory 47	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements
Block 4 (bit resumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37 memory 17  41 Elements ← GuardShape#40 memory 33  42 StoreElementHole ← GuardShape#40, Elements#41, 43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40 memory 42  47 StoreElementHole ← GuardShape#40, Elements#46, 50 Elements ← GuardShape#40 memory 47  51 InitializedLength ← Elements#50	Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44
Block 4 (bit resumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37 memory 17  41 Elements ← GuardShape#40 memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40 memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40 memory 47  51 InitializedLength ← Elements#50 memory 47	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32
Block 4 (barresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40  memory 47  51 InitializedLength ← Elements#50  memory 47  52 BoundsCheck ← Constant#43, InitializedLength#51	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32 Int32
Block 4 (be resumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40  memory 47  51 InitializedLength ← Elements#50  memory 47  52 BoundsCheck ← Constant#43, InitializedLength#51  53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32 Int32 Int32 Int32
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40  memory 47  51 InitializedLength ← Elements#50  memory 47  52 BoundsCheck ← Constant#43, InitializedLength#51  53 SpectreMaskIndex ← BoundsCheck#52, InitializedLer  54 LoadElement ← Elements#50, SpectreMaskIndex#53	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32 Int32 Int32 Int32
Block 4 (be resumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40  memory 47  51 InitializedLength ← Elements#50  memory 47  52 BoundsCheck ← Constant#43, InitializedLength#51  53 SpectreMaskIndex ← BoundsCheck#52, InitializedLer  54 LoadElement ← Elements#50, SpectreMaskIndex#53  memory 47	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32
Block 4 (baresumepoint 24 24 71 22 21 20 24  72 Beta ← Unbox#31 I[-2147483647, 2147483647]  71 Beta ← Phi#26 I[-2147483648, 2147483646]  35 Constant magic uninitialized-lexical  36 Constant shape at 3fb4256fc20  37 NewPlainObject ← Constant#36  38 Constant 0x0  39 Constant string 3fb4252d780  40 GuardShape ← NewPlainObject#37  memory 17  41 Elements ← GuardShape#40  memory 33  42 StoreElementHole ← GuardShape#40, Elements#41,  43 Constant 0x1  44 Constant string 3fb4252be60  46 Elements ← GuardShape#40  memory 42  47 StoreElementHole ← GuardShape#40, Elements#46,  50 Elements ← GuardShape#40  memory 47  51 InitializedLength ← Elements#50  memory 47  52 BoundsCheck ← Constant#43, InitializedLength#51  53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength  54 LoadElement ← Elements#50, SpectreMaskIndex#53	Int32 Int32 Int32 MagicUninitializedLexical Shape Object Int32 String Object Elements  Constant#38, Constant#39  Int32 String Elements  Constant#43, Constant#44  Elements  Int32 Int32 Int32 Int32

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

# ./Benchmarkers/prop\_access.js:2 - Range Analysis movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
6 Constant 0x0	I[0, 0]: Int32
7 Box ← Constant#2	Value
8 Goto → block 2	

Block 1	
resumepoint 16 15 14 13 12 11 10	_
9 OsrEntry	Pointer
10 Constant undefined	Undefined
11 OsrReturnValue ← OsrEntry#9	Value
12 Parameter THIS_SLOT	Value
13 Parameter 0	Value
14 OsrValue ← OsrEntry#9	Value
15 OsrValue ← OsrEntry#9	Value
16 OsrValue ← OsrEntry#9	Value
17 Start	
18 <u>Unbox OsrValue#14 to Int32 (fallible)</u>	Int32
19 Goto $\rightarrow$ block 2	

### Block 2 resumepoint 24 24 23 22 21 20 24 20 Phi ← Box#7, OsrReturnValue#11 Value 21 Phi ← Parameter#0, Parameter#12 Value 22 Phi ← Parameter#1, Parameter#13 Value 23 Phi ← Constant#6, Unbox#18 Int32 24 Constant magic optimized-out MagicOptimizedOut 31 Unbox Phi#22 to Int32 (fallible) Int32 25 Goto $\rightarrow$ block 3

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

### Block 4 (backedge) resumepoint 24 24 71 22 21 20 24 72 Beta $\leftarrow$ Unbox#31 I[-2147483647, 2147483647] I[-2147483647, 2147483647]: Int32 71 Beta $\leftarrow$ Phi#26 I[-2147483648, 2147483646] I[-2147483648, 2147483646]: Int32 MagicUninitializedLexical 35 Constant magic uninitialized-lexical Shape 36 Constant shape at 3fb4256fc20 37 NewPlainObject ← Constant#36 Object 38 Constant 0x0 I[0, 0]: Int32 39 Constant string 3fb4252d780 String 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39

Block 5 resumepoint 24 24 26 22 21 20 24 61 Return ← Phi#20

Elements

String

I[1, 1]: Int32

47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40 memory 47

44 Constant string 3fb4252be60

46 Elements ← GuardShape#40

Elements

51 InitializedLength ← Elements#50 memory 47

I[0, 268435444]: Int32

43 Constant 0x1

memory 42

52 BoundsCheck ← Constant#43, InitializedLength#51

I[1, 1]: Int32

53 SpectreMaskIndex ← BoundsCheck#52, InitializedLength#51

I[1, 1]: Int32

54 LoadElement ← Elements#50, SpectreMaskIndex#53

Value

memory 47

58 Add ← Beta#71, Constant#43 [int32]

I[-2147483647, 2147483647]: Int32

59 Goto → block 3

# ./Benchmarkers/prop\_access.js:2 - De-Beta movable, guard, in worklist, recovered on bailout

		1
	Block 1	
Block 0	resumepoint 16 15 14 13 12 11 10	_
resumepoint 2 2 2 1 0 2 2	9 OsrEntry Po	ointer
	10 Constant undefined Unde	efined
_	11 OsrReturnValue ← OsrEntry#9	Value
1 Parameter 0 Value	12 Parameter THIS_SLOT	Value
2 Constant undefined Undefined	13 Parameter 0	Value
3 Start	14 OsrValue ← OsrEntry#9	Value
4 CheckOverRecursed	15 OsrValue ← OsrEntry#9	Value
6 Constant 0x0 I[0, 0]: Int32	16 OsrValue ← OsrEntry#9	Value
7 Box ← Constant#2 Value	17 Start	
8 Goto → block 2	18 Unbox OsrValue#14 to Int32 (fallible)	Int32
	19 Goto → block 2	
D	look 2	
	lock 2	
resumepoint 24 24 23 22		
20 Phi ← Box#7, OsrReturn		
21 Phi ← Parameter#0, Para		
22 Phi ← Parameter#1, Para		
23 Phi ← Constant#6, Unbo		
24 Constant magic optimize		
31 <u>Unbox Phi#22 to Int32 (</u>	<u>fallible</u> ) Int32	
25 Goto → block 3		
	<b>▼</b>	
	(loop header)	
resumepoint 24 24 26 22 21 20 24		
·	7483648 {#23}, 2147483647 {[loop] #31-1}]: Ir	nt32
28 InterruptCheck		.
32 Compare ← Phi#26, Unbox#31 Lt		Bool
33 Test $\leftarrow$ Compare#32 $\rightarrow$ block 4, block 5		

### 35 Constant magic uninitialized-lexical MagicUninitializedLexical 36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject $\leftarrow$ Constant#36 Object I[0, 0]: Int32 38 Constant 0x0 39 Constant string 3fb4252d780 String 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 I[1, 1]: Int32 44 Constant string 3fb4252be60 String 46 Elements ← GuardShape#40 Elements memory 42 47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44 50 Elements ← GuardShape#40 Elements memory 47 51 InitializedLength $\leftarrow$ Elements#50 I[0, 268435444]: Int32 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51 I[1, 1]: Int32 53 SpectreMaskIndex $\leftarrow$ BoundsCheck#52, InitializedLength#51 I[1, 1]: Int32 54 LoadElement ← Elements#50, SpectreMaskIndex#53 Value memory 47 58 Add ← Phi#26, Constant#43 [int32] I[-2147483647, 2147483647]: Int32

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

Block 4 (backedge)

resumepoint 24 24 26 22 21 20 24

59 Goto → block 3

# ./Benchmarkers/prop\_access.js:2 - RA check UCE movable, guard, in worklist, recovered on bailout

	Block 1 resumepoint 16 15 14 13 12 11 10	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	9 OsrEntry 10 Constant undefined 11 OsrReturnValue ← OsrEntry#9 12 Parameter THIS_SLOT 13 Parameter 0 14 OsrValue ← OsrEntry#9 15 OsrValue ← OsrEntry#9 16 OsrValue ← OsrEntry#9 17 Start	Pointer Undefined Value Value Value Value Value Value Value
8 Goto → block 2	18 <u>Unbox OsrValue#14 to Int32 (fallible)</u> 19 Goto → block 2	Int32
resumepoint 24 24 23 22	lock 2 2 21 20 24	
20 Phi ← Box#7, OsrReturn 21 Phi ← Parameter#0, Para	Value#11 Value	
22 Phi ← Parameter#1, Para 23 Phi ← Constant#6, Unbo 24 Constant magic optimize	x#18 Int32	

# Block 3 (loop header)

31 Unbox Phi#22 to Int32 (fallible)

25 Goto  $\rightarrow$  block 3

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

### Block 4 (backedge) resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical MagicUninitializedLexical 36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject ← Constant#36 Object 38 Constant 0x0 I[0, 0]: Int32 String 39 Constant string 3fb4252d780 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 I[1, 1]: Int32 44 Constant string 3fb4252be60 String

47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40

46 Elements ← GuardShape#40

Elements

Elements

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

memory 47 51 InitializedLength ← Elements#50

memory 47

memory 42

I[0, 268435444]: Int32

52 BoundsCheck ← Constant#43, InitializedLength#51

I[1, 1]: Int32

53 SpectreMaskIndex  $\leftarrow$  BoundsCheck#52, InitializedLength#51

I[1, 1]: Int32

54 LoadElement ← Elements#50, SpectreMaskIndex#53 memory 47

Value

58 Add ← Phi#26, Constant#43 [int32]

59 Goto → block 3

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Truncate Doubles movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	_
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
6 Constant 0x0	I[0, 0]: Int32
$7 \text{ Box} \leftarrow \text{Constant#2}$	Value
8 Goto → block 2	

Block 1	
resumepoint 16 15 14 13 12 11 10	
9 OsrEntry	Pointer
10 Constant undefined	Undefined
11 OsrReturnValue ← OsrEntry#9	Value
12 Parameter THIS_SLOT	Value
13 Parameter 0	Value
14 OsrValue ← OsrEntry#9	Value
15 OsrValue ← OsrEntry#9	Value
16 OsrValue ← OsrEntry#9	Value
17 Start	
18 Unbox OsrValue#14 to Int32 (fallible)	Int32
19 Goto → block 2	

Block 2 resumepoint 24 24 23 22 21 20 24 20 Phi ← Box#7, OsrReturnValue#11 Value 21 Phi ← Parameter#0, Parameter#12 Value 22 Phi ← Parameter#1, Parameter#13 Value 23 Phi ← Constant#6, Unbox#18 Int32 24 Constant magic optimized-out MagicOptimizedOut 31 Unbox Phi#22 to Int32 (fallible) Int32 25 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

### Block 4 (backedge)

resumepoint 24 24 26 22 21 20 24

35 Constant magic uninitialized-lexical 36 Constant shape at 3fb4256fc20

37 NewPlainObject ← Constant#36

38 Constant 0x0

39 Constant string 3fb4252d780

40 GuardShape ← NewPlainObject#37

memory 17

41 Elements ← GuardShape#40

memory 33

42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39

43 Constant 0x1

44 Constant string 3fb4252be60

46 Elements ← GuardShape#40 memory 42

47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40

51 InitializedLength ← Elements#50

memory 47

memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51

 $\textbf{53} \ SpectreMaskIndex} \leftarrow BoundsCheck\#52, InitializedLength\#51$ 

54 LoadElement ← Elements#50. SpectreMaskIndex#53

memory 47

58 Add ← Phi#26, Constant#43 [int32]

59 Goto  $\rightarrow$  block 3

MagicUninitializedLexical

Shape Object

I[0, 0]: Int32 String

Object

Elements

I[1, 1]: Int32

String Elements

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

Block 5 resumepoint 24 24 26 22 21 20 24 61 Return ← Phi#20

# ./Benchmarkers/prop\_access.js:2 - Sink movable, guard, in worklist, recovered on bailout

I[-2147483647, 2147483647]: Int32

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

	Block 1	
Block 0	resumepoint 16 15 14 13 12 11 10	
resumepoint 2 2 2 1 0 2 2	9 OsrEntry	Pointer
0 Parameter THIS SLOT Value	10 Constant undefined	Undefined
1 Parameter 0 Value	11 OsrReturnValue ← OsrEntry#9	Value
2 Constant undefined Undefined	12 Parameter THIS_SLOT	Value
3 Start	13 Parameter 0	Value
4 CheckOverRecursed	14 OsrValue ← OsrEntry#9	Value
6 Constant 0x0	15 OsrValue ← OsrEntry#9	Value
$7 \text{ Box} \leftarrow \text{Constant#2} \qquad \text{Value}$	16 OsrValue ← OsrEntry#9	Value
8 Goto → block 2	17 Start	
O GOLO 7 BIOCK 2	18 <u>Unbox OsrValue#14 to Int32 (fallible</u>	Int32
	19 Goto → block 2	
$oldsymbol{B}$	lock 2	
resumepoint 24 24 23 22	2 21 20 24	
20 Phi ← Box#7, OsrReturn	Value#11 Value	
21 Phi ← Parameter#0, Para	ameter#12 Value	
22 Phi ← Parameter#1, Para	ameter#13 Value	
23 Phi ← Constant#6, Unbo	ox#18 Int32	
24 Constant magic optimize	ed-out MagicOptimizedOut	
31 <u>Unbox Phi#22 to Int32 (</u>	fallible) Int32	
25 Goto → block 3		
	₩	
Block 3 (	(loop header)	
resumepoint 24 24 26 22 21 20 24		
Phi ← Phi#23, Add#58 I[-214	7483648 {#23}, 2147483647 {[loop] #31-	1}]: Int32
InterruptCheck		
Compare ← Phi#26, Unbox#31 Lt		Bool

### resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical MagicUninitializedLexical 36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject $\leftarrow$ Constant#36 Object 38 Constant 0x0 I[0, 0]: Int32 39 Constant string 3fb4252d780 String 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 I[1, 1]: Int32 44 Constant string 3fb4252be60 String 46 Elements ← GuardShape#40 Elements memory 42 47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44 50 Elements ← GuardShape#40 Elements memory 47 51 InitializedLength ← Elements#50 I[0, 268435444]: Int32 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51 I[1, 1]: Int32 53 SpectreMaskIndex $\leftarrow$ BoundsCheck#52, InitializedLength#51 I[1, 1]: Int32 54 LoadElement ← Elements#50, SpectreMaskIndex#53 Value

Block 4 (backedge)

33 Test ← Compare#32 → block 4, block 5

memory 47

59 Goto → block 3

58 Add ← Phi#26, Constant#43 [int32]

# ./Benchmarkers/prop\_access.js:2 - Remove Unnecessary Bitops movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
6 Constant 0x0	I[0, 0]: Int32
7 Box ← Constant#2	Value
$8 \text{ Goto} \rightarrow \text{block } 2$	
	Blo
resume	point 24 24 23 22 2

Block 1	
resumepoint 16 15 14 13 12 11 10	
9 OsrEntry	Pointer
10 Constant undefined	Undefined
11 OsrReturnValue ← OsrEntry#9	Value
12 Parameter THIS_SLOT	Value
13 Parameter 0	Value
14 OsrValue ← OsrEntry#9	Value
15 OsrValue ← OsrEntry#9	Value
16 OsrValue ← OsrEntry#9	Value
17 Start	
18 Unbox OsrValue#14 to Int32 (fallible)	Int32
19 Goto $\rightarrow$ block 2	

	Block 2	
	resumepoint 24 24 23 22 21 20 24	
	20 Phi ← Box#7, OsrReturnValue#11	Value
	21 Phi ← Parameter#0, Parameter#12	Value
	22 Phi ← Parameter#1, Parameter#13	Value
	23 Phi ← Constant#6, Unbox#18	Int32
	24 Constant magic optimized-out	Magic Optimized Out
	31 <u>Unbox Phi#22 to Int32 (fallible)</u>	Int32
	25 Goto $\rightarrow$ block 3	
- 1		

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

# Block 4 (backedge) resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical

36 Constant shape at 3fb4256fc20

37 NewPlainObject ← Constant#36

38 Constant 0x0

39 Constant string 3fb4252d780

40 GuardShape ← NewPlainObject#37

memory 17

41 Elements ← GuardShape#40

memory 33

42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39

43 Constant 0x1

44 Constant string 3fb4252be60

46 Elements ← GuardShape#40 memory 42

47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40

51 InitializedLength ← Elements#50

memory 47

memory 47

52 BoundsCheck ← Constant#43, InitializedLength#51

53 SpectreMaskIndex  $\leftarrow$  BoundsCheck#52, InitializedLength#51

54 LoadElement ← Elements#50, SpectreMaskIndex#53

memory 47

58 Add ← Phi#26, Constant#43 [int32]

59 Goto → block 3

MagicUninitializedLexical

Shape Object

I[0, 0]: Int32

String

Object

Elements

I[1, 1]: Int32

String

Elements

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

Block 5 resumepoint 24 24 26 22 21 20 24 61 Return ← Phi#20

# ./Benchmarkers/prop\_access.js:2 - Fold Linear Arithmetic Constants movable, guard, in worklist, recovered on bailout

	Block 1	
Block 0	resumepoint 16 15 14 13 12 11 10	
resumepoint 2 2 2 1 0 2 2	9 OsrEntry	Pointer
_	10 Constant undefined	Undefined
	11 OsrReturnValue ← OsrEntry#9	Value
1 Parameter 0 Value	12 Parameter THIS SLOT	Value
2 Constant undefined Undefined	13 Parameter 0	Value
3 Start	14 OsrValue ← OsrEntry#9	Value
4 CheckOverRecursed	15 OsrValue ← OsrEntry#9	Value
6 Constant 0x0 I[0, 0]: Int32	16 OsrValue ← OsrEntry#9	Value
$7 \text{ Box} \leftarrow \text{Constant#2}$ Value	17 Start	Varao
8 Goto → block 2	18 <u>Unbox OsrValue#14 to Int32 (fallible</u>	ınt32
	19 Goto → block 2	<u> </u>
	19 Goto - block 2	
<b>—</b>	<b>/</b>	
В	lock 2	
resumepoint 24 24 23 22	2 21 20 24	
20 Phi ← Box#7, OsrReturn	value#11 Value	
21 Phi ← Parameter#0, Par	ameter#12 Value	
22 Phi ← Parameter#1, Par		
23 Phi ← Constant#6, Unbo		
24 Constant magic optimize		
31 <u>Unbox Phi#22 to Int32 (</u>	5 -	
$25 \text{ Goto} \rightarrow \text{block } 3$	111002	
25 Goto 7 Block 5		

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

### Block 4 (backedge) resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical MagicUninitializedLexical 36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject ← Constant#36 Object 38 Constant 0x0 I[0, 0]: Int32 String 39 Constant string 3fb4252d780 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 I[1, 1]: Int32 44 Constant string 3fb4252be60 String

memory 42 47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40

46 Elements ← GuardShape#40

Elements

Elements

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

memory 47 51 InitializedLength ← Elements#50

58 Add ← Phi#26, Constant#43 [int32]

memory 47

I[0, 268435444]: Int32

52 BoundsCheck ← Constant#43, InitializedLength#51

I[1, 1]: Int32

53 SpectreMaskIndex  $\leftarrow$  BoundsCheck#52, InitializedLength#51 54 LoadElement ← Elements#50, SpectreMaskIndex#53

I[1, 1]: Int32 Value

memory 47

59 Goto → block 3

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Effective Address Analysis movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	_
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
6 Constant 0x0	I[0, 0]: Int32
$7 \text{ Box} \leftarrow \text{Constant#2}$	Value
8 Goto → block 2	

Block 1	
resumepoint 16 15 14 13 12 11 10	_
9 OsrEntry	Pointer
10 Constant undefined	Undefined
11 OsrReturnValue ← OsrEntry#9	Value
12 Parameter THIS_SLOT	Value
13 Parameter 0	Value
14 OsrValue ← OsrEntry#9	Value
15 OsrValue ← OsrEntry#9	Value
16 OsrValue ← OsrEntry#9	Value
17 Start	
18 Unbox OsrValue#14 to Int32 (fallible)	Int32
19 Goto → block 2	

Block 2 resumepoint 24 24 23 22 21 20 24 20 Phi ← Box#7, OsrReturnValue#11 Value 21 Phi ← Parameter#0, Parameter#12 Value 22 Phi ← Parameter#1, Parameter#13 Value Int32 23 Phi ← Constant#6, Unbox#18 24 Constant magic optimized-out MagicOptimizedOut 31 Unbox Phi#22 to Int32 (fallible) Int32 25 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 24 24 26 22 21 20 24

26 Phi ← Phi#23, Add#58

I[-2147483648 {#23}, 2147483647 {[loop] #31-1}]: Int32

28 InterruptCheck

32 Compare ← Phi#26, Unbox#31 Lt

33 Test  $\leftarrow$  Compare#32  $\rightarrow$  block 4, block 5

Bool

MagicUninitializedLexical

# Block 4 (backedge)

# resumepoint 24 24 26 22 21 20 24

- 35 Constant magic uninitialized-lexical
- 36 Constant shape at 3fb4256fc20
- 37 NewPlainObject ← Constant#36
- 38 Constant 0x0
- 39 Constant string 3fb4252d780
- 40 GuardShape ← NewPlainObject#37

memory 17

41 Elements ← GuardShape#40

memory 33

42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39

43 Constant 0x1

44 Constant string 3fb4252be60

46 Elements ← GuardShape#40

memory 42

47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44

50 Elements ← GuardShape#40

memory 47 51 InitializedLength ← Elements#50

 $\textbf{53} \ SpectreMaskIndex} \leftarrow BoundsCheck\#52, InitializedLength\#51$ 

54 LoadElement ← Elements#50. SpectreMaskIndex#53 memory 47

58 Add ← Phi#26, Constant#43 [int32] 59 Goto  $\rightarrow$  block 3

memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51

I[-2147483647, 2147483647]: Int32

I[0, 0]: Int32 String

Object

Shape

Object

Elements

I[1, 1]: Int32 String

Elements

Elements

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[0, 268435444]: Int32

61 Return ← Phi#20

Block 5

resumepoint 24 24 26 22 21 20 24

# ./Benchmarkers/prop\_access.js:2 - DCE movable, guard, in worklist, recovered on bailout

Bool

I[-2147483647, 2147483647]: Int32

Block 5

61 Return ← Phi#20

resumepoint 24 24 26 22 21 20 24

	Block 1	
	resumepoint 16 15 14 13 12 11 10  9 OsrEntry  10 Constant undefined  11 OsrReturnValue ← OsrEntry#9  12 Parameter THIS_SLOT  13 Parameter 0  14 OsrValue ← OsrEntry#9  15 OsrValue ← OsrEntry#9  16 OsrValue ← OsrEntry#9  17 Start  18 Unbox OsrValue#14 to Int32 (fallible)	Pointer Undefined Value Value Value Value Value Int32
	19 Goto → block 2	11102
B	lock 2	
resumepoint 24 24 23 22		
20 Phi ← Box#7, OsrReturn		
21 Phi ← Parameter#0, Para		
22 Phi ← Parameter#1, Para		
23 Phi ← Constant#6, Unbo		
24 Constant magic optimize 31 <u>Unbox Phi#22 to Int32 (</u>	<u> </u>	
$25 \text{ Goto} \rightarrow \text{block } 3$		
	<b>↓</b>	
Block 3 (	loop header)	
resumepoint 24 24 26 22 21 20 24		
$Phi \leftarrow Phi\#23$ , $Add\#58$ I[-214] InterruptCheck	7483648 {#23}, 2147483647 {[loop] #31-1	}]: Int32

### resumepoint 24 24 26 22 21 20 24 35 Constant magic uninitialized-lexical MagicUninitializedLexical 36 Constant shape at 3fb4256fc20 Shape 37 NewPlainObject $\leftarrow$ Constant#36 Object 38 Constant 0x0 I[0, 0]: Int32 39 Constant string 3fb4252d780 String 40 GuardShape ← NewPlainObject#37 Object memory 17 41 Elements ← GuardShape#40 Elements memory 33 42 StoreElementHole ← GuardShape#40, Elements#41, Constant#38, Constant#39 43 Constant 0x1 I[1, 1]: Int32 44 Constant string 3fb4252be60 String 46 Elements ← GuardShape#40 Elements memory 42 47 StoreElementHole ← GuardShape#40, Elements#46, Constant#43, Constant#44 50 Elements ← GuardShape#40 Elements memory 47 51 InitializedLength ← Elements#50 I[0, 268435444]: Int32 memory 47 52 BoundsCheck ← Constant#43, InitializedLength#51 I[1, 1]: Int32 53 SpectreMaskIndex $\leftarrow$ BoundsCheck#52, InitializedLength#51 I[1, 1]: Int32 54 LoadElement ← Elements#50, SpectreMaskIndex#53 Value

Block 4 (backedge)

32 Compare ← Phi#26, Unbox#31 Lt

memory 47

59 Goto → block 3

58 Add ← Phi#26, Constant#43 [int32]

33 Test ← Compare#32 → block 4, block 5

		<u> </u>		
			Block 1	
1 Parameter 0 V 2 Constant undefined Undef 3 Start 4 CheckOverRecursed 5 Constant 0x0 I[0, 0]: In		8 OsrEntry 9 Constant und 10 OsrReturnVa 11 Parameter TI 12 Parameter 0 13 OsrValue ← 0 14 OsrValue ← 0 15 OsrValue ← 0 16 Start 17 Unbox OsrVa	lue ← OsrEntry#8 HIS_SLOT OsrEntry#8 OsrEntry#8 OsrEntry#8	Pointer Undefined Value Value Value Value Value Value Value Value
		18 Goto → block	. 2	
	Bl	ock 2		
resumepoint 23 2	23 22 21	20 19 23		
19 Phi ← Box#6, Osi	rReturn	Value#10	Value	
20 Phi ← Parameter	#0, Para	meter#11	Value	
21 Phi ← Parameter	#1, Para	meter#12	Value	
22 Phi ← Constant#	5, Unbox	x#17	Int32	
23 Constant magic of	_	_	OptimizedOut	
24 <u>Unbox Phi#21 to</u>	<u>) Int32 (f</u>	<u>fallible)</u>	Int32	
25 Goto → block 3				
		<b>V</b>		
	Block 3 (l	oop header)		
resumepoint 23 23 26 21 20 19 23				
26 Phi ← Phi#22, Add#47	I[-2147	7483648 {#22}, 2	147483647 {[loop] #2	24-1}]: Int32

### Block 4 (backedge) resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical Magic Uninitialized Lexical31 Constant shape at 3fb4256fc20 Shape 32 Constant 0x0 I[0, 0]: Int32 33 Constant string 3fb4252d780 String 34 Constant string 3fb4252be60 String 35 NewPlainObject $\leftarrow$ Constant#31 Object 36 GuardShape ← NewPlainObject#35 Object memory 16 37 Elements ← GuardShape#36 Elements memory 29 38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33 39 Constant 0x1 I[1, 1]: Int32

27 InterruptCheck

40 Elements ← GuardShape#36

42 Elements ← GuardShape#36

43 InitializedLength  $\leftarrow$  Elements#42

47 Add ← Phi#26, Constant#39 [int32]

44 BoundsCheck ← Constant#39, InitializedLength#43

46 LoadElement ← Elements#42, SpectreMaskIndex#45

45 SpectreMaskIndex  $\leftarrow$  BoundsCheck#44, InitializedLength#43

memory 38

memory 41

memory 41

memory 41

48 Goto → block 3

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

Elements

Bool

Block 5

49 Return ← Phi#19

resumepoint 23 23 26 21 20 19 23

# ./Benchmarkers/prop\_access.js:2 - Make loops contiguous movable, guard, in worklist, recovered on bailout

Value Int32

Int32

Block 0 resumepoint 2 2 2 1 0 2 2 0 Parameter THIS_SLOT 1 Parameter 0 2 Constant undefined 3 Start 4 CheckOverRecursed 5 Constant 0x0 6 Box ← Constant#2 7 Goto → block 2	Value Value Undefined I[0, 0]: Int32 Value	8 OsrEntry 9 Constant und 10 OsrReturnVal 11 Parameter TH 12 Parameter 0 13 OsrValue ← 0 14 OsrValue ← 0 15 OsrValue ← 0 16 Start 17 Unbox OsrVal	ue ← OsrEntry#8 IIS_SLOT srEntry#8 srEntry#8 srEntry#8 ue#13 to Int32 (falli)	ble)
19 Phi ← Bo	Booint 23 23 22 23 ox#6, OsrReturn arameter#0, Par	nValue#10	Value Value	

21 Phi ← Parameter#1, Parameter#12

22 Phi ← Constant#5, Unbox#17 23 Constant magic optimized-out

25 Goto  $\rightarrow$  block 3

24 Unbox Phi#21 to Int32 (fallible)

# Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

MagicOptimizedOut

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

Block 4 (backedge)

resumepoint 23 23 26 21 20 19 23

30 Constant magic uninitialized-lexical

31 Constant shape at 3fb4256fc20

32 Constant 0x0

33 Constant string 3fb4252d780

34 Constant string 3fb4252be60

35 NewPlainObject ← Constant#31 36 GuardShape ← NewPlainObject#35

memory 16

37 Elements ← GuardShape#36

40 Elements ← GuardShape#36

memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36 memory 41

43 InitializedLength ← Elements#42

memory 41

44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← BoundsCheck#44, InitializedLength#43

46 LoadElement ← Elements#42. SpectreMaskIndex#45

memory 41

47 Add ← Phi#26, Constant#39 [int32]

48 Goto  $\rightarrow$  block 3

MagicUninitializedLexical

Bool

Pointer

Value

Value Value Value

Value

Value

Int32

Undefined

Shape

I[0, 0]: Int32

String

String

Object

Object

Elements

I[1, 1]: Int32

Elements

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Remove fake loop predecessors movable, guard, in worklist, recovered on bailout

	Block 1	
Block 0	resumepoint 15 14 13 12 11 10 9	
resumepoint 2 2 2 1 0 2 2	8 OsrEntry	Pointer
_	9 Constant undefined	Undefined
0 Parameter THIS_SLOT Value 1 Parameter 0 Value	10 OsrReturnValue ← OsrEntry#8	Value
2 Constant undefined Undefined	11 Parameter THIS_SLOT	Value
	12 Parameter 0	Value
3 Start 4 CheckOverRecursed	13 OsrValue ← OsrEntry#8	Value
	14 OsrValue ← OsrEntry#8	Value
5 Constant 0x0 I[0, 0]: Int32	15 OsrValue ← OsrEntry#8	Value
6 Box ← Constant#2 Value	16 Start	
7 Goto → block 2	17 <u>Unbox OsrValue#13 to Int32 (fallible)</u>	Int32
	18 Goto → block 2	
BI	ock 2	
resumepoint 23 23 22 21		
19 Phi $\leftarrow$ Box#6, OsrReturn		
•		
20 Phi ← Parameter#0, Para		
21 Phi ← Parameter#1, Para		
22 Phi ← Constant#5, Unbox		
23 Constant magic optimized 24 <u>Unbox Phi#21 to Int32 (f</u>	5 -	
·	<u>fallible)</u> Int32	
25 Goto → block 3		

# Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

# Block 4 (backedge)

30 Constant magic uninitialized-lexical

resumepoint 23 23 26 21 20 19 23

31 Constant shape at 3fb4256fc20

32 Constant 0x0

33 Constant string 3fb4252d780

34 Constant string 3fb4252be60

35 NewPlainObject  $\leftarrow$  Constant#31 36 GuardShape ← NewPlainObject#35

memory 16

37 Elements ← GuardShape#36

memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36

43 InitializedLength ← Elements#42

40 Elements ← GuardShape#36

memory 41

memory 41

44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← BoundsCheck#44, InitializedLength#43

46 LoadElement ← Elements#42, SpectreMaskIndex#45

memory 41

47 Add ← Phi#26, Constant#39 [int32]

48 Goto → block 3

MagicUninitializedLexical

Bool

Shape

I[0, 0]: Int32

String

String

Object

Object

Elements

I[1, 1]: Int32

Elements

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Edge Case Analysis (Late) movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
0 Parameter THIS_SLOT	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant 0x0	I[0, 0]: Int32
$6 \text{ Box} \leftarrow \text{Constant}#2$	Value
7 Goto → block 2	

Block 1	
resumepoint 15 14 13 12 11 10 9	<u>.</u>
8 OsrEntry	Pointer
9 Constant undefined	Undefined
10 OsrReturnValue ← OsrEntry#8	Value
11 Parameter THIS_SLOT	Value
12 Parameter 0	Value
13 OsrValue ← OsrEntry#8	Value
14 OsrValue ← OsrEntry#8	Value
15 OsrValue ← OsrEntry#8	Value
16 Start	
17 <u>Unbox OsrValue#13 to Int32 (fallible)</u>	Int32
18 Goto → block 2	

Block 2 resumepoint 23 23 22 21 20 19 23 19 Phi ← Box#6, OsrReturnValue#10 Value 20 Phi ← Parameter#0, Parameter#11 Value 21 Phi ← Parameter#1, Parameter#12 Value 22 Phi ← Constant#5, Unbox#17 Int32 23 Constant magic optimized-out MagicOptimizedOut 24 Unbox Phi#21 to Int32 (fallible) Int32 25 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

Bool

### Block 4 (backedge) resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical MagicUninitializedLexical 31 Constant shape at 3fb4256fc20 Shape 32 Constant 0x0 I[0, 0]: Int32 33 Constant string 3fb4252d780 String 34 Constant string 3fb4252be60 String 35 NewPlainObject ← Constant#31 Object 36 GuardShape ← NewPlainObject#35 Object memory 16 37 Elements ← GuardShape#36 Elements

memory 29 38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

40 Elements ← GuardShape#36

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36 memory 41

43 InitializedLength ← Elements#42 memory 41

I[0, 268435444]: Int32

44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← BoundsCheck#44, InitializedLength#43

I[1, 1]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Elements

Elements

46 LoadElement ← Elements#42. SpectreMaskIndex#45 memory 41

Value

47 Add ← Phi#26, Constant#39 [int32]

I[-2147483647, 2147483647]: Int32

48 Goto → block 3

# ./Benchmarkers/prop\_access.js:2 - Bounds Check Elimination movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
<pre>0 Parameter THIS_SLOT</pre>	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant 0x0	I[0, 0]: Int32
$6 \text{ Box} \leftarrow \text{Constant#2}$	Value
7 Goto $\rightarrow$ block 2	

```
Block 1
   resumepoint 15 14 13 12 11 10 9
 8 OsrEntry
                                           Pointer
 9 Constant undefined
                                        Undefined
10 OsrReturnValue ← OsrEntry#8
                                            Value
11 Parameter THIS_SLOT
                                            Value
12 Parameter 0
                                            Value
13 OsrValue ← OsrEntry#8
                                            Value
14 OsrValue ← OsrEntry#8
                                            Value
15 OsrValue ← OsrEntry#8
                                            Value
16 Start
17 Unbox OsrValue#13 to Int32 (fallible)
                                            Int32
18 Goto \rightarrow block 2
```

Block 2 resumepoint 23 23 22 21 20 19 23 19 Phi ← Box#6, OsrReturnValue#10 Value 20 Phi ← Parameter#0, Parameter#11 Value 21 Phi ← Parameter#1, Parameter#12 Value Int32 22 Phi ← Constant#5, Unbox#17 23 Constant magic optimized-out MagicOptimizedOut 24 Unbox Phi#21 to Int32 (fallible) Int32 25 Goto  $\rightarrow$  block 3

## Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

Bool

### Block 4 (backedge)

resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical

31 Constant shape at 3fb4256fc20

32 Constant 0x0

33 Constant string 3fb4252d780

34 Constant string 3fb4252be60

35 NewPlainObject ← Constant#31

36 GuardShape ← NewPlainObject#35

memory 16

37 Elements ← GuardShape#36

40 Elements ← GuardShape#36

memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36

memory 41 43 InitializedLength ← Elements#42

memory 41 44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← Constant#39, InitializedLength#43

46 LoadElement ← Elements#42. SpectreMaskIndex#45 memory 41

47 Add ← Phi#26, Constant#39 [int32]

48 Goto  $\rightarrow$  block 3

MagicUninitializedLexical

Shape

I[0, 0]: Int32 String

String

Object

Object

Elements

I[1, 1]: Int32

Elements

Elements

I[0, 268435444]: Int32

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Shape Guard Elimination movable, guard, in worklist, recovered on bailout

Block 0		
resumepoint 2 2 2 1 0 2 2		
0 Parameter THIS_SLOT	Value	
1 Parameter 0	Value	
2 Constant undefined	Undefined	
3 Start		
4 CheckOverRecursed		
5 Constant 0x0	I[0, 0]: Int32	
$6 \text{ Box} \leftarrow \text{Constant#2}$	Value	
7 Goto → block 2		

```
Block 1
   resumepoint 15 14 13 12 11 10 9
 8 OsrEntry
                                           Pointer
 9 Constant undefined
                                        Undefined
10 OsrReturnValue ← OsrEntry#8
                                            Value
11 Parameter THIS_SLOT
                                            Value
12 Parameter 0
                                            Value
13 OsrValue ← OsrEntry#8
                                            Value
14 OsrValue ← OsrEntry#8
                                            Value
15 OsrValue ← OsrEntry#8
                                            Value
16 Start
17 Unbox OsrValue#13 to Int32 (fallible)
                                            Int32
18 Goto \rightarrow block 2
```

Block 2 resumepoint 23 23 22 21 20 19 23 19 Phi ← Box#6, OsrReturnValue#10 Value 20 Phi ← Parameter#0, Parameter#11 Value 21 Phi ← Parameter#1, Parameter#12 Value Int32 22 Phi ← Constant#5, Unbox#17 23 Constant magic optimized-out MagicOptimizedOut 24 Unbox Phi#21 to Int32 (fallible) Int32 25 Goto  $\rightarrow$  block 3

### Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test  $\leftarrow$  Compare #28  $\rightarrow$  block 4, block 5

# Block 4 (backedge)

resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical

31 Constant shape at 3fb4256fc20 32 Constant 0x0

33 Constant string 3fb4252d780

34 Constant string 3fb4252be60

35 NewPlainObject ← Constant#31

36 GuardShape ← NewPlainObject#35

memory 16

37 Elements ← GuardShape#36

memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36

40 Elements ← GuardShape#36

memory 41 43 InitializedLength ← Elements#42

memory 41

46 LoadElement ← Elements#42. SpectreMaskIndex#45 memory 41

48 Goto  $\rightarrow$  block 3

44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← Constant#39, InitializedLength#43

47 Add ← Phi#26, Constant#39 [int32]

I[-2147483647, 2147483647]: Int32

Bool

Shape

String

String

Object

Object

Elements

Elements

Elements

I[1, 1]: Int32

I[1, 1]: Int32

Value

I[0, 268435444]: Int32

I[1, 1]: Int32

I[0, 0]: Int32

MagicUninitializedLexical

resumepoint 23 23 26 21 20 19 23 49 Return ← Phi#19

Block 5

# ./Benchmarkers/prop\_access.js:2 - GC Barrier Elimination movable, guard, in worklist, recovered on bailout

	Block 1	
Block 0	resumepoint 15 14 13 12 11 10 9	_
resumepoint 2 2 2 1 0 2 2	8 OsrEntry	Pointer
0 Parameter THIS SLOT Value	9 Constant undefined	Undefined
1 Parameter 0 Value	10 OsrReturnValue ← OsrEntry#8	Value
2 Constant undefined Undefined	11 Parameter THIS_SLOT	Value
3 Start	12 Parameter 0	Value
4 CheckOverRecursed	13 OsrValue ← OsrEntry#8	Value
5 Constant 0x0 I[0, 0]: Int32	14 OsrValue ← OsrEntry#8	Value
	15 OsrValue ← OsrEntry#8	Value
$6 Box \leftarrow Constant#2 Value 7 Goto \rightarrow block 2$	16 Start	
/ Goto → block 2	17 Unbox OsrValue#13 to Int32 (fallible	Int32
	18 Goto → block 2	
BI	lock 2	
resumepoint 23 23 22 21		
19 Phi ← Box#6, OsrReturn		
20 Phi ← Parameter#0, Para		
21 Phi ← Parameter#1, Para		
22 Phi ← Constant#5, Unbo		
23 Constant magic optimize		
24 <u>Unbox Phi#21 to Int32 (</u>	-	

# Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

25 Goto  $\rightarrow$  block 3

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

Bool

### Block 4 (backedge) resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical MagicUninitializedLexical 31 Constant shape at 3fb4256fc20 Shape 32 Constant 0x0 I[0, 0]: Int32 33 Constant string 3fb4252d780 String 34 Constant string 3fb4252be60 String 35 NewPlainObject $\leftarrow$ Constant#31 Object 36 GuardShape ← NewPlainObject#35 Object memory 16 37 Elements ← GuardShape#36 Elements memory 29 38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

40 Elements ← GuardShape#36

memory 38

Elements

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

memory 41

42 Elements ← GuardShape#36 Elements

memory 41

43 InitializedLength ← Elements#42

I[0, 268435444]: Int32

44 BoundsCheck ← Constant#39, InitializedLength#43

I[1, 1]: Int32

I[1, 1]: Int32

45 SpectreMaskIndex ← Constant#39, InitializedLength#43

I[1, 1]: Int32 Value

46 LoadElement ← Elements#42, SpectreMaskIndex#45 memory 41

47 Add ← Phi#26, Constant#39 [int32]

I[-2147483647, 2147483647]: Int32

48 Goto → block 3

# ./Benchmarkers/prop\_access.js:2 - FoldLoadsWithUnbox movable, guard, in worklist, recovered on bailout

Block 0 resumepoint 2 2 2 1 0 2 2 0 Parameter THIS_SLOT Value 1 Parameter 0 Value 2 Constant undefined Undefined 3 Start	Block 1 resumepoint 15 14 13 12 11 10 9 8 OsrEntry 9 Constant undefined 10 OsrReturnValue ← OsrEntry#8 11 Parameter THIS_SLOT 12 Parameter 0 13 OsrValue ← OsrEntry#8	Pointer Undefined Value Value Value Value
4 CheckOverRecursed 5 Constant 0x0 6 Box ← Constant#2 7 Goto → block 2  I[0, 0]: Int32 Value	14 OsrValue ← OsrEntry#8  15 OsrValue ← OsrEntry#8  16 Start  17 Unbox OsrValue#13 to Int32 (fallible  18 Goto → block 2	Value Value
resumepoint 23 23 22 21  19 Phi ← Box#6, OsrReturn  20 Phi ← Parameter#0, Para  21 Phi ← Parameter#1, Para  22 Phi ← Constant#5, Unbox  23 Constant magic optimize	Value#10 Value meter#11 Value meter#12 Value x#17 Int32	

# Block 3 (loop header)

24 Unbox Phi#21 to Int32 (fallible)

25 Goto  $\rightarrow$  block 3

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

### Block 4 (backedge) resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical MagicUninitializedLexical 31 Constant shape at 3fb4256fc20 Shape 32 Constant 0x0 I[0, 0]: Int32 33 Constant string 3fb4252d780 String 34 Constant string 3fb4252be60 String 35 NewPlainObject ← Constant#31 Object 36 GuardShape ← NewPlainObject#35 Object memory 16 37 Elements ← GuardShape#36 Elements memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

40 Elements ← GuardShape#36

memory 38

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

42 Elements ← GuardShape#36 memory 41

43 InitializedLength ← Elements#42

I[0, 268435444]: Int32

memory 41 44 BoundsCheck ← Constant#39, InitializedLength#43

I[1, 1]: Int32

I[1, 1]: Int32

Elements

Elements

Bool

45 SpectreMaskIndex ← Constant#39, InitializedLength#43

I[1, 1]: Int32

46 LoadElement ← Elements#42, SpectreMaskIndex#45 memory 41

Value

Block 5

49 Return ← Phi#19

resumepoint 23 23 26 21 20 19 23

47 Add ← Phi#26, Constant#39 [int32]

48 Goto → block 3

I[-2147483647, 2147483647]: Int32

# ./Benchmarkers/prop\_access.js:2 - Add KeepAlive Instructions movable, guard, in worklist, recovered on bailout

Block 0	
resumepoint 2 2 2 1 0 2 2	
<pre>0 Parameter THIS_SLOT</pre>	Value
1 Parameter 0	Value
2 Constant undefined	Undefined
3 Start	
4 CheckOverRecursed	
5 Constant 0x0	I[0, 0]: Int32
$6 \text{ Box} \leftarrow \text{Constant#2}$	Value
$7 \text{ Goto} \rightarrow \text{block } 2$	

Block 1	
resumepoint 15 14 13 12 11 10 9	_
8 OsrEntry	Pointer
9 Constant undefined	Undefined
10 OsrReturnValue ← OsrEntry#8	Value
11 Parameter THIS_SLOT	Value
12 Parameter 0	Value
13 OsrValue ← OsrEntry#8	Value
14 OsrValue ← OsrEntry#8	Value
15 OsrValue ← OsrEntry#8	Value
16 Start	
17 <u>Unbox OsrValue#13 to Int32 (fallible)</u>	Int32
18 Goto → block 2	

Int32

# Block 2

resumepoint 23 23 22 21 20 19 23 19 Phi ← Box#6, OsrReturnValue#10 Value 20 Phi ← Parameter#0, Parameter#11 Value 21 Phi ← Parameter#1, Parameter#12 Value

Int32 22 Phi ← Constant#5, Unbox#17 23 Constant magic optimized-out MagicOptimizedOut

24 Unbox Phi#21 to Int32 (fallible) 25 Goto  $\rightarrow$  block 3

# Block 3 (loop header)

resumepoint 23 23 26 21 20 19 23

26 Phi ← Phi#22, Add#47

I[-2147483648 {#22}, 2147483647 {[loop] #24-1}]: Int32

27 InterruptCheck

28 Compare ← Phi#26, Unbox#24 Lt

29 Test ← Compare#28 → block 4, block 5

# Block 4 (backedge)

resumepoint 23 23 26 21 20 19 23 30 Constant magic uninitialized-lexical 31 Constant shape at 3fb4256fc20 32 Constant 0x0

33 Constant string 3fb4252d780

34 Constant string 3fb4252be60

35 NewPlainObject ← Constant#31

36 GuardShape ← NewPlainObject#35

memory 16

37 Elements ← GuardShape#36

memory 29

38 StoreElementHole ← GuardShape#36, Elements#37, Constant#32, Constant#33

39 Constant 0x1

40 Elements ← GuardShape#36

memory 38

42 Elements ← GuardShape#36

41 StoreElementHole ← GuardShape#36, Elements#40, Constant#39, Constant#34

memory 41 75 DebugEnterGCUnsafeRegion

73 <u>DebugEnterGCUnsafeRegion</u>

43 InitializedLength ← Elements#42

I[0, 268435444]: Int32 memory 41

76 DebugLeaveGCUnsafeRegion

44 BoundsCheck ← Constant#39, InitializedLength#43

45 SpectreMaskIndex ← Constant#39, InitializedLength#43

46 LoadElement ← Elements#42, SpectreMaskIndex#45 memory 41

74 DebugLeaveGCUnsafeRegion

47 Add ← Phi#26, Constant#39 [int32]

48 Goto  $\rightarrow$  block 3

MagicUninitializedLexical

Shape I[0, 0]: Int32

Bool

String String

Object Object

Elements

I[1, 1]: Int32

Elements

I[1, 1]: Int32

I[1, 1]: Int32

I[-2147483647, 2147483647]: Int32

Value

Elements

# ./Benchmarkers/prop\_access.js:2 - Generate LIR

movable, guard, in worklist, recovered on bailout

### Block 0

- 1  $\{v1 < x > :arg:0\} \leftarrow parameter$
- $2 \{v2 < x > :arg:8\} \leftarrow parameter$
- 3 checkoverrecursed
- 4 osipoint
- $5 \{v3 < x >\} \leftarrow value$
- $6 \{v4 < i >\} \leftarrow integer(0)$
- 7 goto s=(block 2)

### Block 1

- $8 \{v6 < g > : rcx\} \leftarrow osrentry t = (v5 < g >)$
- 9  $\{v7 < x >\}$   $\leftarrow$  osrreturnvalue (v6:R)
- 10  $\{v8 < x > :arg:0\} \leftarrow parameter$
- 11  $\{v9 < x > :arg:8\} \leftarrow parameter$
- 12  $\{v10 < x >\} \leftarrow osrvalue (v6:R)$
- 13  $\{v11 < x >\} \leftarrow osrvalue (v6:R)$
- 14  $\{v12 < x >\}$   $\leftarrow$  osrvalue (v6:R)
- 15  $\{v13 < i >\} \leftarrow unbox (v10:R)$
- 16 goto s = (block 2)

### Block 2

- 17  $\{v14 < x >\} \leftarrow phi(v3:A), (v7:A)$
- 18  $\{v15 < x >\} \leftarrow phi (v1:A), (v8:A)$
- 19  $\{v16 < x >\} \leftarrow phi (v2:A), (v9:A)$
- 20  $\{v17 < i >\} \leftarrow phi (v4:A), (v13:A)$
- 21  $\{v18 < i >\} \leftarrow unbox (v16:R)$
- 22 goto s=(block 3)

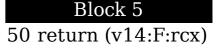
### Block 3

- 23  $\{v19 < i >\}$   $\leftarrow phi (v17:A), (v41:A)$
- 24 interruptcheck
- 25 osipoint
- 26 compareandbranch (v19:R), (v18:A) s=(block 4, block 5)

# $\int_{1}$

# Block 4

- $27 \{v23 < o >\} \leftarrow \text{newplainobject } t=(v20 < g >, v21 < g >, v22 < g >)$
- 28 osipoint
- 29  $\{v25 < o > : tied(0)\} \leftarrow guardshape (v23:R) t = (v24 < g >)$
- $30 \{v26 < s >\} \leftarrow elements (v25:R)$
- $31 \{v27 < i >\} \leftarrow integer(0)$
- 32 storeelementholet (v25:R), (v26:R), (v27:R), (string) t=(v28 < g > t)
- 33 osipoint
- $34 \{v29 < s >\} \leftarrow elements (v25:R)$
- $35 \{v30 < i >\} \leftarrow integer (1)$
- 36 storeelementholet (v25:R), (v29:R), (v30:R), (string) t=(v31 < g > t)
- 37 osipoint
- 38  $\{v32 < s >\} \leftarrow elements (v25:R)$
- 39 debugentergcunsaferegion t=(v33 < g>)
- 40 debugentergcunsaferegion t=(v34 < g>)
- 41  $\{v35 < i >\} \leftarrow initializedlength (v32:R)$
- 42 debugleavegcunsaferegion t=(v36 < g>)
- 43 boundscheck (1), (v35:A)
- 44  $\{v37 < i >\} \leftarrow integer (1)$
- 45  $\{v38 < i >\} \leftarrow spectremaskindex (v37:R), (v35:A)$
- 46  $\{v39 < x >\} \leftarrow loadelementv (v32:R), (v38:R)$
- 47 debugleavegcunsaferegion t=(v40 < g>)
- 48  $\{v41 < i > : tied(0)\} \leftarrow addi (v19:R), (1)$
- 49 goto s=(block 3)



# ./Benchmarkers/prop\_access.js:2 - Allocate Registers [Backtracking]

movable, guard, in worklist, recovered on bailout

# Block 0

- 1  $\{v1 < x > :arg:0\} \leftarrow parameter$
- 2  $\{v2 < x > :arg:8\} \leftarrow parameter$
- 3 checkoverrecursed
- 4 osipoint
- $5 \{v3 < x > :rbx\} \leftarrow value$
- 6  $\{v4 < i > : rax\} \leftarrow integer (0)$
- 0 movegroup [arg:0  $\rightarrow$  r8, x]
- 7 qoto s=(block 2)

### Block 1

- 8  $\{v6 < g > : rcx\} \leftarrow osrentry t = (v5 < g > : rax)$
- 9  $\{v7 < x > :rbx\} \leftarrow osrreturnvalue (rcx)$
- 10  $\{v8 < x > :arg:0\} \leftarrow parameter$
- 11  $\{v9 < x > :arg:8\} \leftarrow parameter$
- 12  $\{v10 < x > : rdx\} \leftarrow osrvalue(rcx)$
- 13  $\{v11 < x > :rsi\} \leftarrow osrvalue (rcx)$
- 14  $\{v12 < x > :rdi\} \leftarrow osrvalue (rcx)$
- 15  $\{v13 < i > :rax\} \leftarrow unbox (rdx)$
- 0 movegroup [arg:0  $\rightarrow$  r8, x]
- 16 goto s = (block 2)

### Block 2

- 17  $\{v14 < x >\} \leftarrow phi(v3:A), (v7:A)$
- 18  $\{v15 < x >\} \leftarrow phi(v1:A), (v8:A)$
- 19  $\{v16 < x >\} \leftarrow phi(v2:A), (v9:A)$
- 20  $\{v17 < i >\} \leftarrow phi (v4:A), (v13:A)$
- 0 movegroup [arg:8  $\rightarrow$  rcx, x]
- 21  $\{v18 < i > : rdx\} \leftarrow unbox (rcx)$
- 0 movegroup [rbx  $\rightarrow$  r12, x], [arg:8  $\rightarrow$  r9, x]
- 22 goto s=(block 3)

## Block 3

- 23  $\{v19 < i >\} \leftarrow phi (v17:A), (v41:A)$
- 24 interruptcheck
- 25 osipoint
- 26 compareandbranch (rax), (rdx) s=(block 4, block 5)

# Block 4

- $27 \{v23 < o > :rbx\} \leftarrow newplainobject t = (v20 < g > :rsi, v21 < g > :rcx, v22 < g > :rdi)$
- 28 osipoint
  - 0 movegroup [rbx  $\rightarrow$  r10, o]
- 29  $\{v25 < o > :rbx\} \leftarrow guardshape (rbx) t = (v24 < g > :rcx)$
- 30  $\{v26 < s > : rcx\} \leftarrow elements (rbx)$
- 31  $\{v27 < i > :rsi\} \leftarrow integer(0)$
- 32 storeelementholet (rbx), (rcx), (rsi), (string) t=(v28<q>:rdi)
- 33 osipoint
- $34 \{v29 < s > :rcx\} \leftarrow elements (rbx)$
- $35 \{v30 < i > :rsi\} \leftarrow integer (1)$
- 36 storeelementholet (rbx), (rcx), (rsi), (string) t=(v31<g>:rdi)
- 37 osipoint
- 38  $\{v32 < s > :rbx\} \leftarrow elements (rbx)$
- 39 debugentergcunsaferegion t=(v33 < g > :rcx)
- 40 debugentergcunsaferegion t=(v34<g>:rcx)
- 41  $\{v35 < i > : rcx\} \leftarrow initialized length (rbx)$
- 42 debugleavegcunsaferegion t=(v36<g>:rsi)
- 43 boundscheck (1), (rcx)
- 44  $\{v37 < i > :rdi\} \leftarrow integer (1)$
- 45 {v38<i>:rsi} ← spectremaskindex (rdi), (rcx)
- 46  $\{v39 < x > : rcx\} \leftarrow loadelementv (rbx), (rsi)$
- 47 debugleavegcunsaferegion t=(v40 < g > :rcx)
- 48  $\{v41 < i > :rax\} \leftarrow addi (rax), (1)$
- 49 goto s=(block 3)

# Block 5

0 movegroup  $[r12 \rightarrow rcx, x]$ 50 return (rcx)