
ANGULAR
ARCHITECTS
INSIDE KNOWLEDGE
Angular's Future with Signals
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Agenda

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Motivation
& Basics

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DEMO

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RxJS/NGRX
Interop

#4
Outlook: Signal
Components

Motivation & Basics

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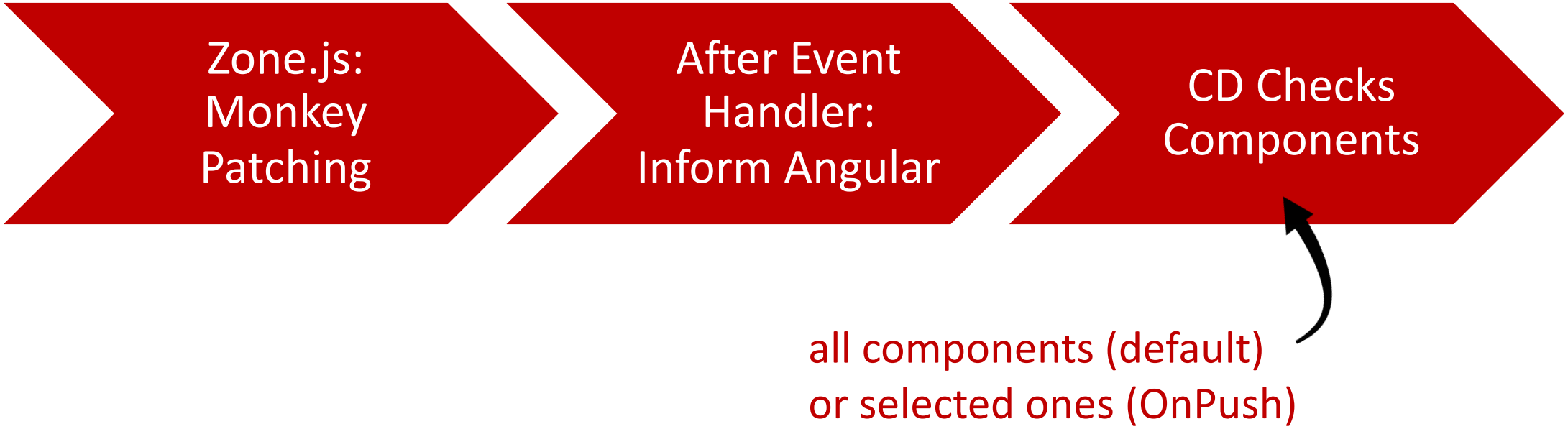
INSIDE KNOWLEDGE

Change Detection (CD) in Angular



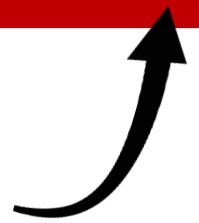
Drawbacks

Zone.js: Magic

Zone.js: ~100K

Cannot patch async/await

coarse grained CD



e.g. Components are always checked as a whole, even if only a tiny fraction changed

How Do Other Frameworks Solve This?

SOLID

SVELTE

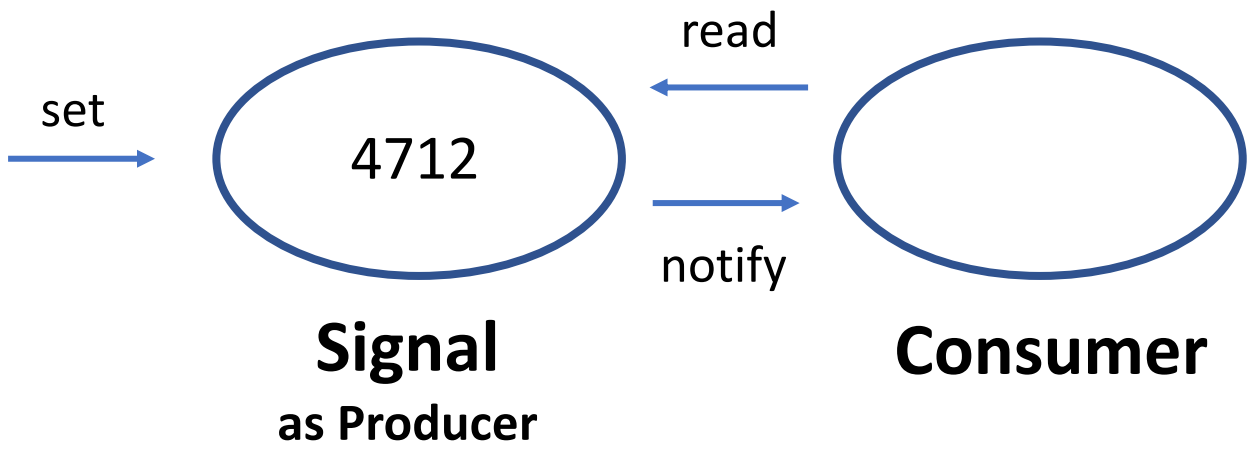
qwik

Signals!

How Will Angular Solve This?

Signals!

Signals: Simple Reactivity



Component Without Signals

```
flights: Flight[] = [];
```

```
const flights = await this.flightService.findAsPromise(from, to);
this.flights = flights;
```

```
<div *ngFor="let f of flights">
    <flight-card [item]="f" />
</div>
```

Component With Signals

```
flights = signal<Flight[]>([]);
```

```
const flights = await this.flightService.findAsPromise(from, to);
this.flights.set(flights);
```

```
<div *ngFor="let f of flights()">
    <flight-card [item]="f" />
</div>
```

RxJS and NGRX Interop

@angular/core/rxjs-interop

- toObservable(signal)
- toSignal(observable$)
- takeUntilDestroyed()

DEMO

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Outlook:

Signal Components

(After Angular 16)

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Signal Based Components

```
@Component({
  signals: true,
  selector: 'temperature-calc',
  template: `
    <p>C: {{ celsius() }}</p>
    <p>F: {{ fahrenheit() }}</p>
  `,
})
export class SimpleCounter {
  celsius = signal(25);
  fahrenheit = computed(() => this.celsius() * 1.8 + 32);
}
```

Signal Inputs

```
@Component({
  signals: true,
  selector: 'temperature-calc',
  template: `
    <p>C: {{ celsius() }}</p>
    <p>F: {{ fahrenheit() }}</p>
  `,
})
export class SimpleCounter {
  celsius = input(25);
  fahrenheit = computed(() => this.celsius() * 1.8 + 32);
}
```

Signal Based Components

Work w/o Zone.js

Interop with traditional components

No need to update code!

Conclusion

Fine-grained CD

Zone-less Future

Convertible to Observables and vice versa!

No need to unsubscribe!

No need to update code!