Authentication in Angular

Jacob Wenger / @_jwngr

AngularJS Meetup / June 15 & 16, 2015

Goal

Authentication sucks and is difficult...

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Authentication sucks and is difficult...

...but not for you!

Authentication Sucks!

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Requires your own server

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User management is tedious

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Myriad OAuth implementations

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Security is hard

Authentication Sucks!

Requires your own server

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Myriad OAuth implementations

Security is hard

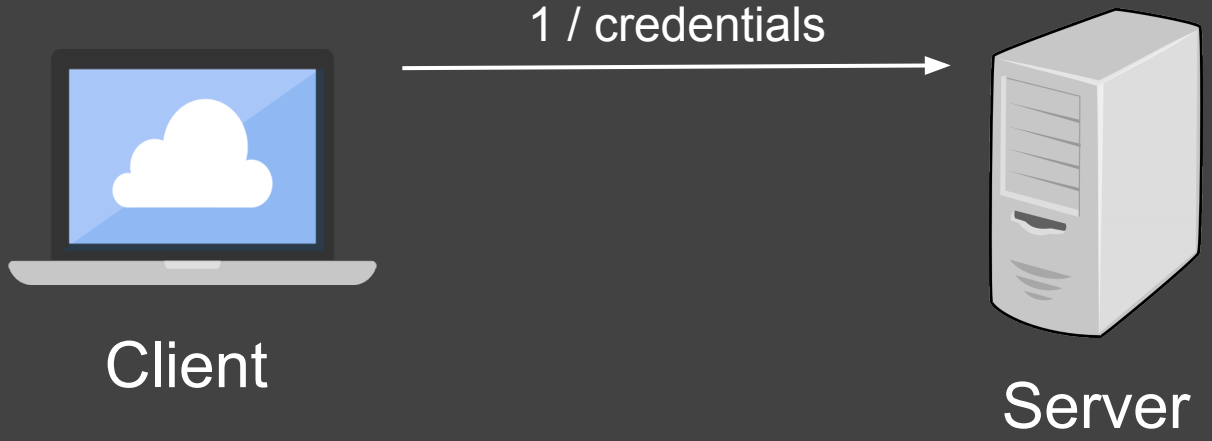
Offline is harder

Cookie-based Auth

Client

Server

Cookie-based Auth



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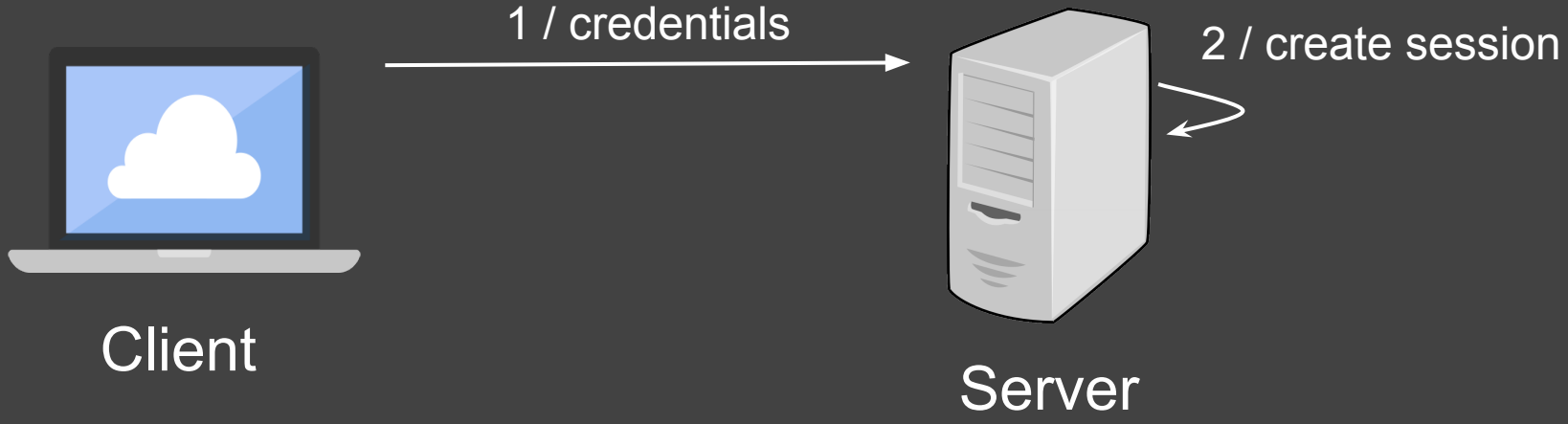

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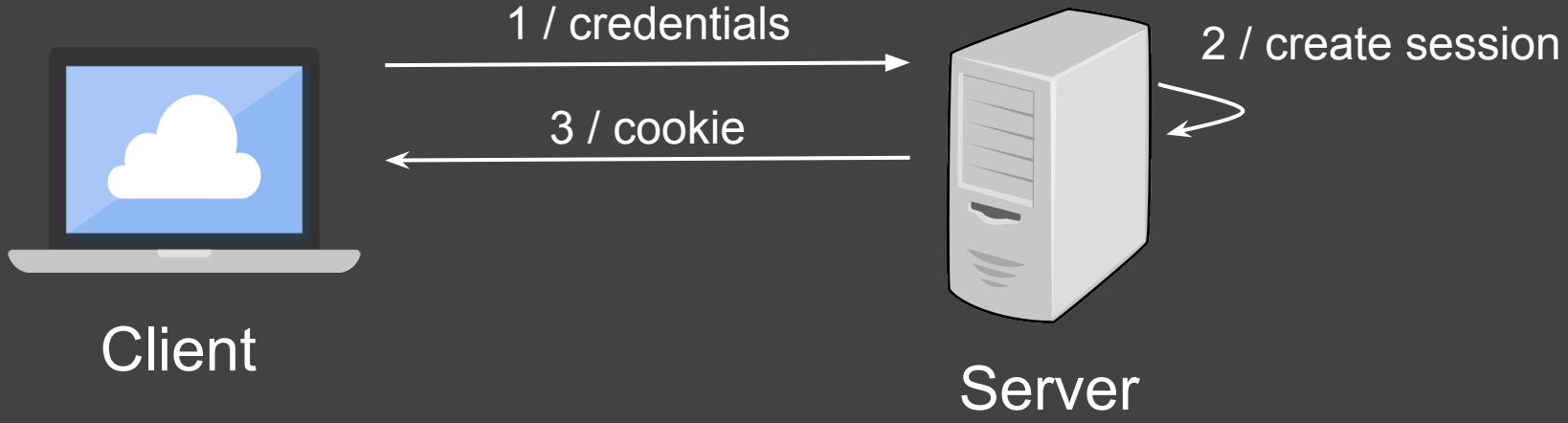

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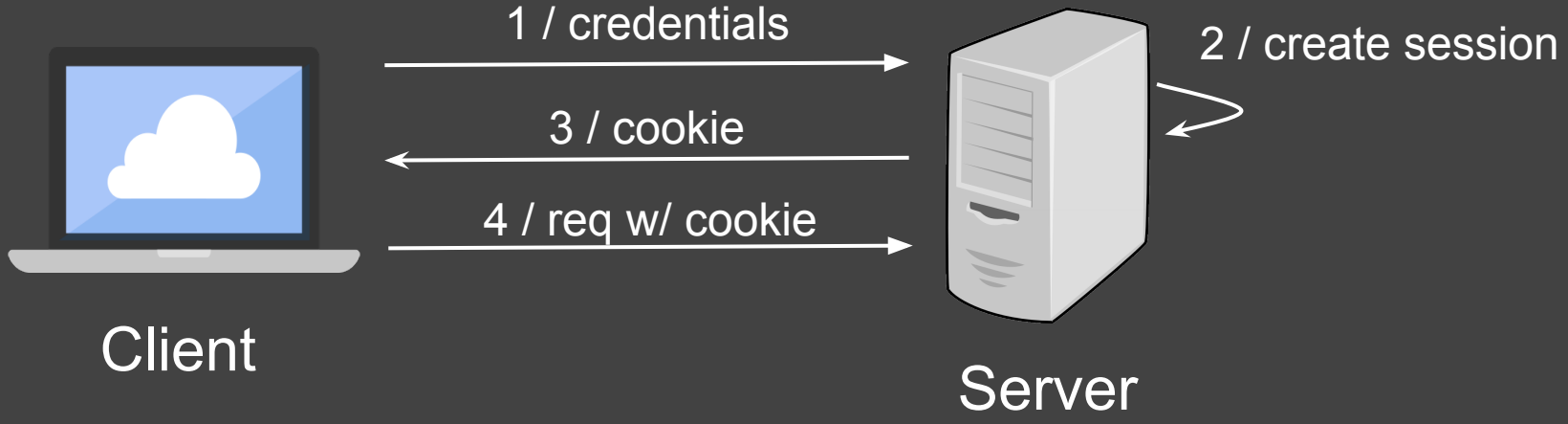

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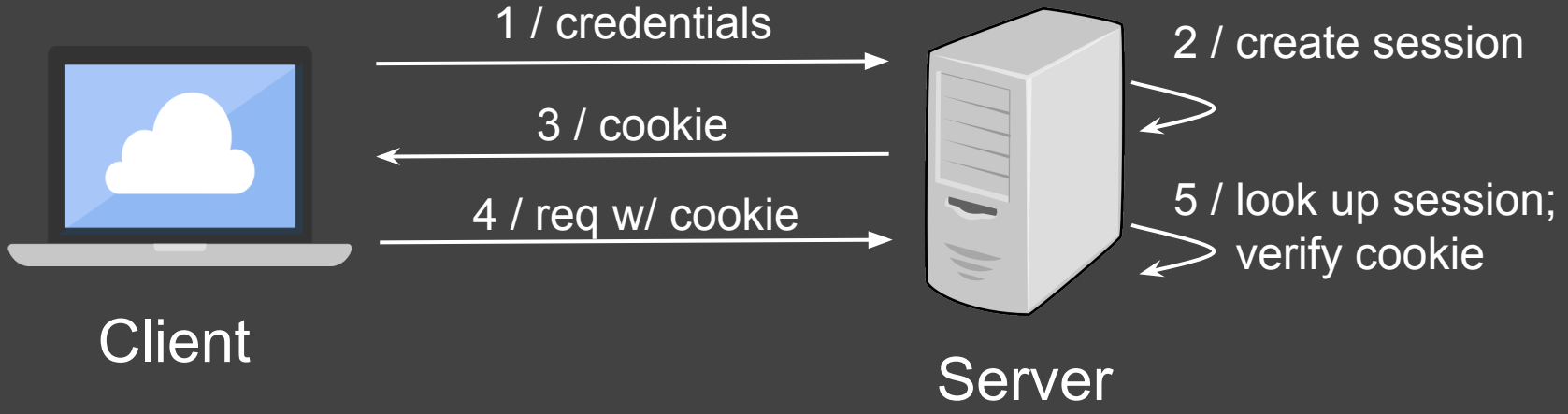

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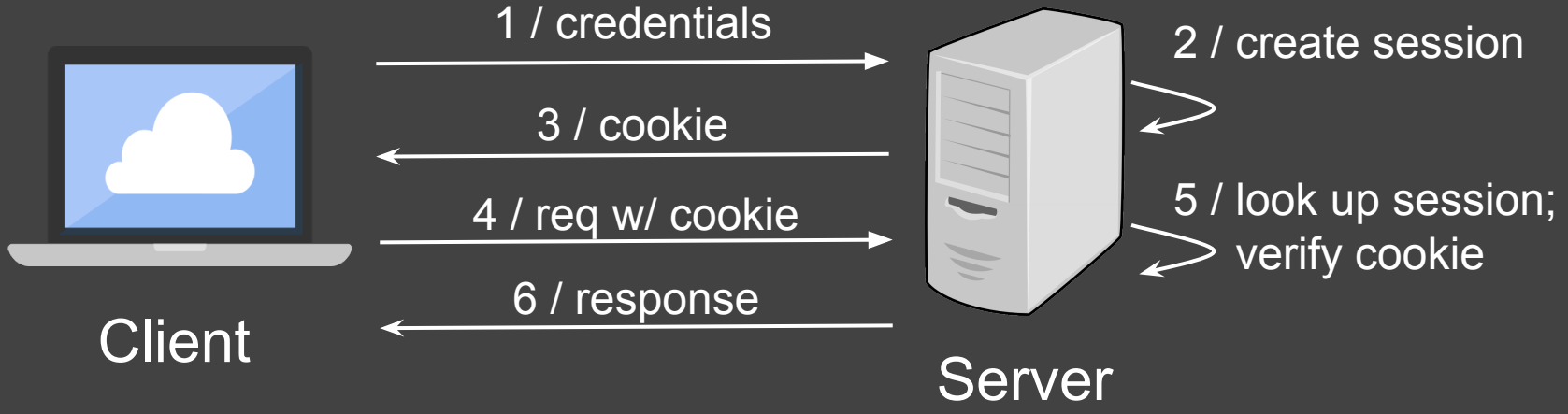

Cookie-based Auth Flaws

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Requires stateful servers

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Limited to one domain

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Susceptible to CSRF

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Lack of mobile support

JSON Web Tokens (JWTs)

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eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1

NiJ9.eyJ2IjowLCJkIjp7InVpZCI6ImFu

b255bW91czotSnJRcXhESThMX2ZCL

VFndnVjbiIsInByb3ZpZGVyIjoiYW5vbn

ltb3VzIn0sImlhdCI6MTQzMzkxMjcyNX

0.L9G282A3G6qgAds3YWEFzdX4olcyT

z_S9q9ptJSH0T_nc

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{
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  "exp": 1433913414641
}
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```

HMACSHA256(base64(header) + base64(payload) + secret);

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Not encrypted

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Claims contains custom data

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Stored in local storage

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Server generates and validates JWTs

Generating JWTs

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var token = jwt.generateToken({
  some: "arbitrary",
  data: "here"
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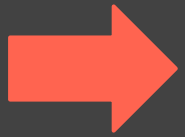

eyJ0eXAiOiJKV1Q
iLCJhbGciOiJIUzI
1NiJ9.
eyJ2IjowLCJkIjp7I
nVpZCI6ImFub25
5bW91czotSnJRc
XhESThMX2ZCLVF
ndnVjbiIsInByb3Z
pZGVyIjoiYW5vbn.

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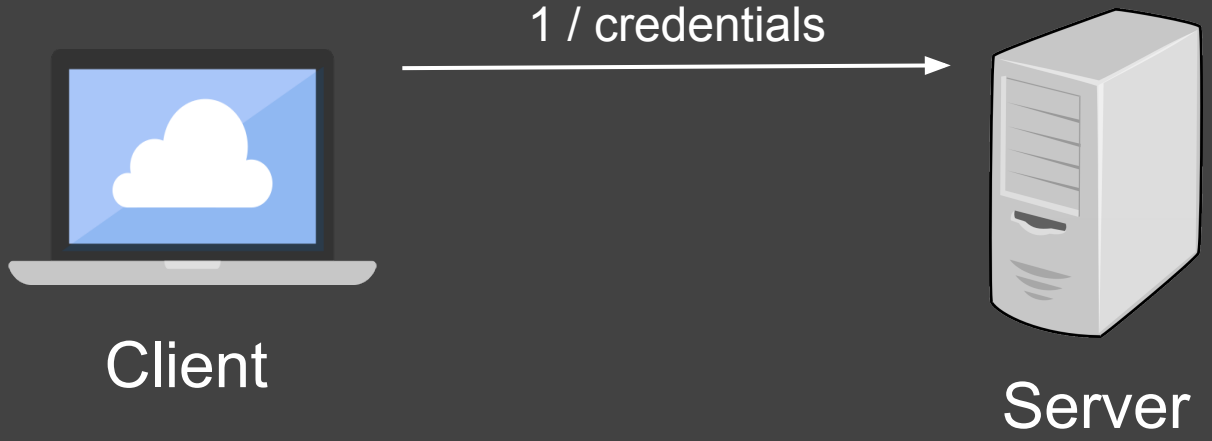
JWT-based Auth

Client

Server

JWT-based Auth



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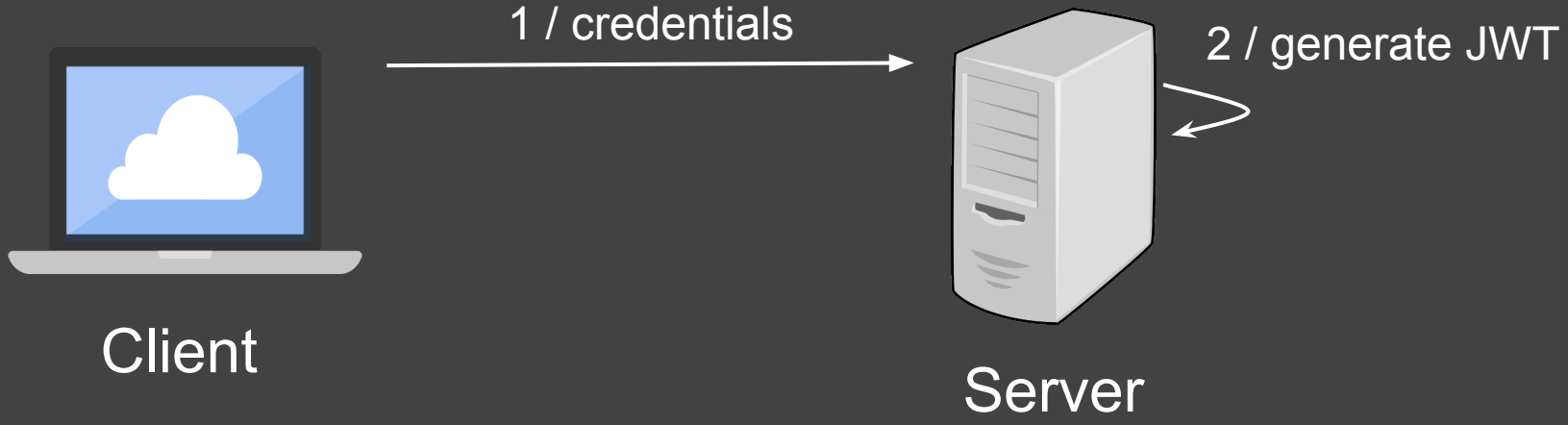

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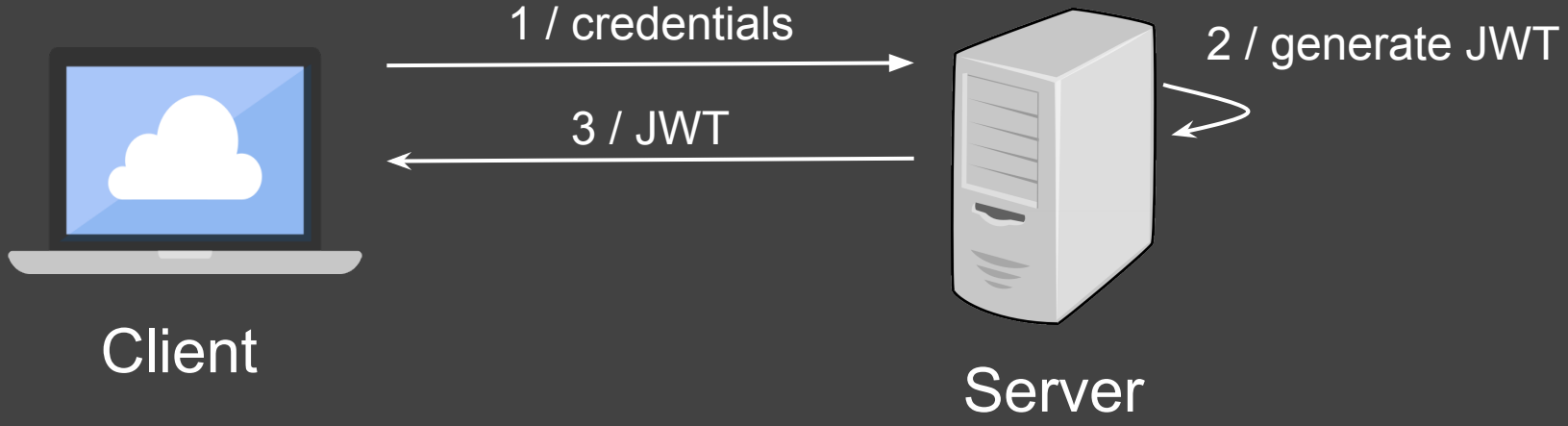

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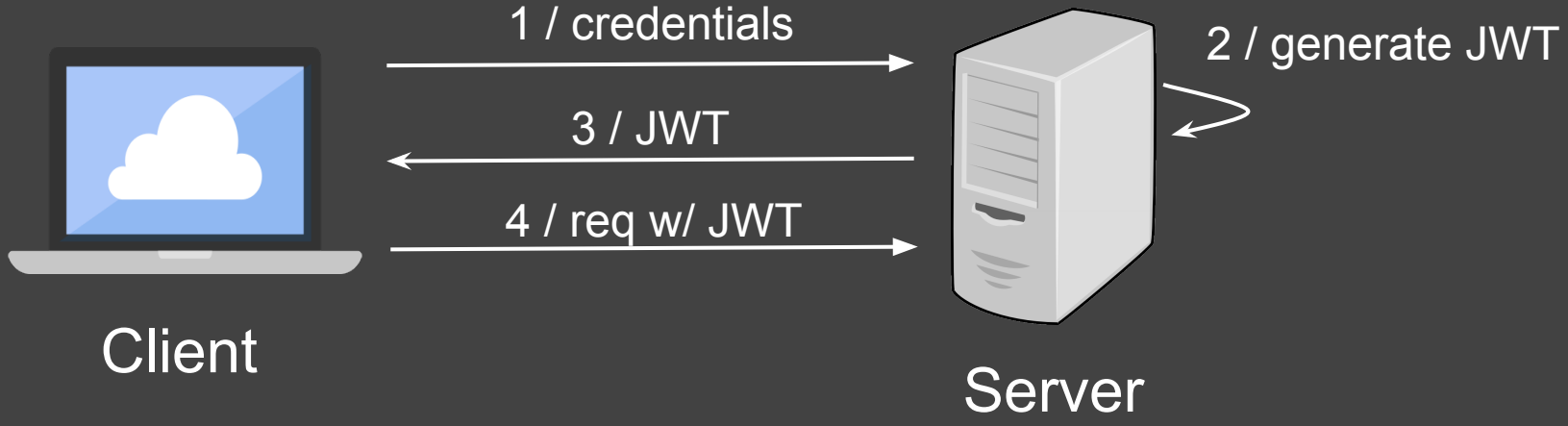

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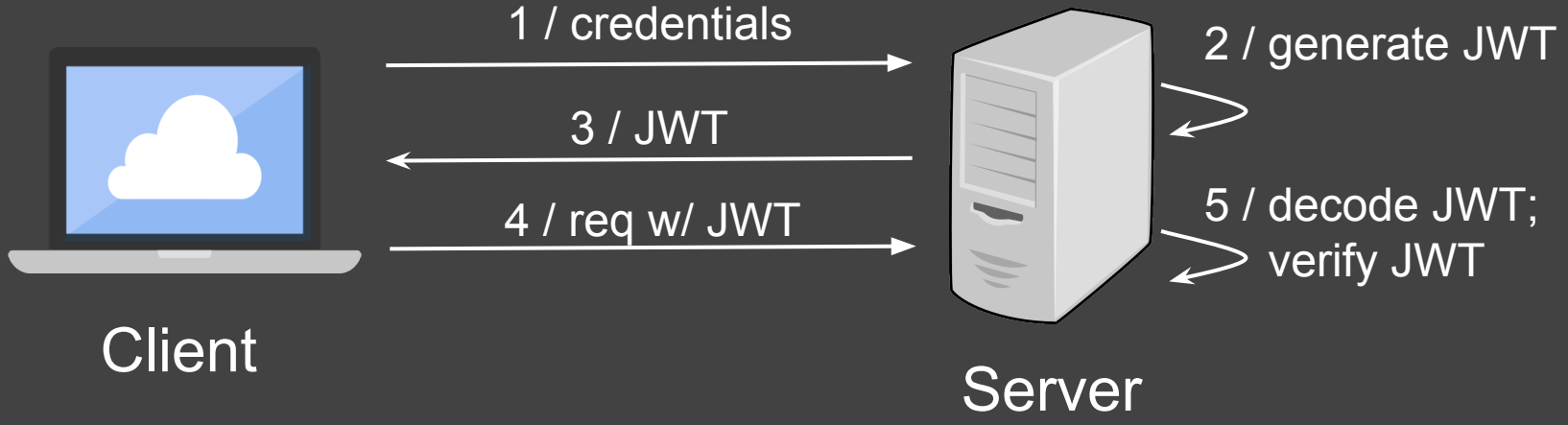

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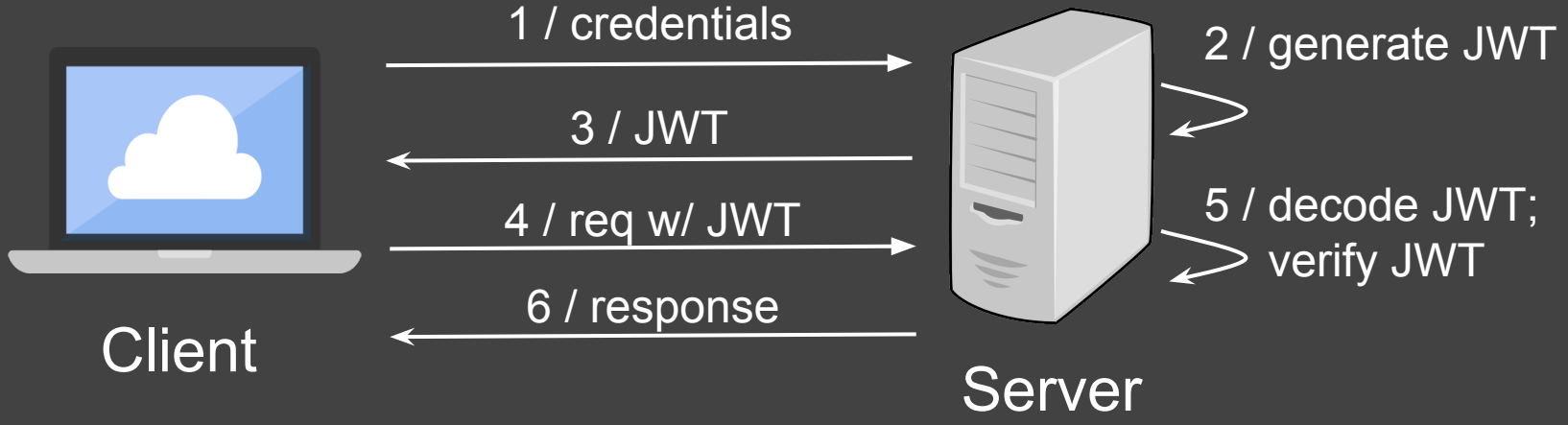

Why JWTs?

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State is kept on the client, not the server

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Work across multiple domains

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Work just as well on mobile as they do on web

Generated / validated by anyone with the secret

Susceptible to XSS (so be careful!)

JWTs FTW

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So JWTs are great and all…

JWTs FTW?

So JWTs are great and all…

… but how do get the data to put in them?

Why Is Auth Hard?

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Need server to generate JWTs

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Need database to store users

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Storing passwords is tricky

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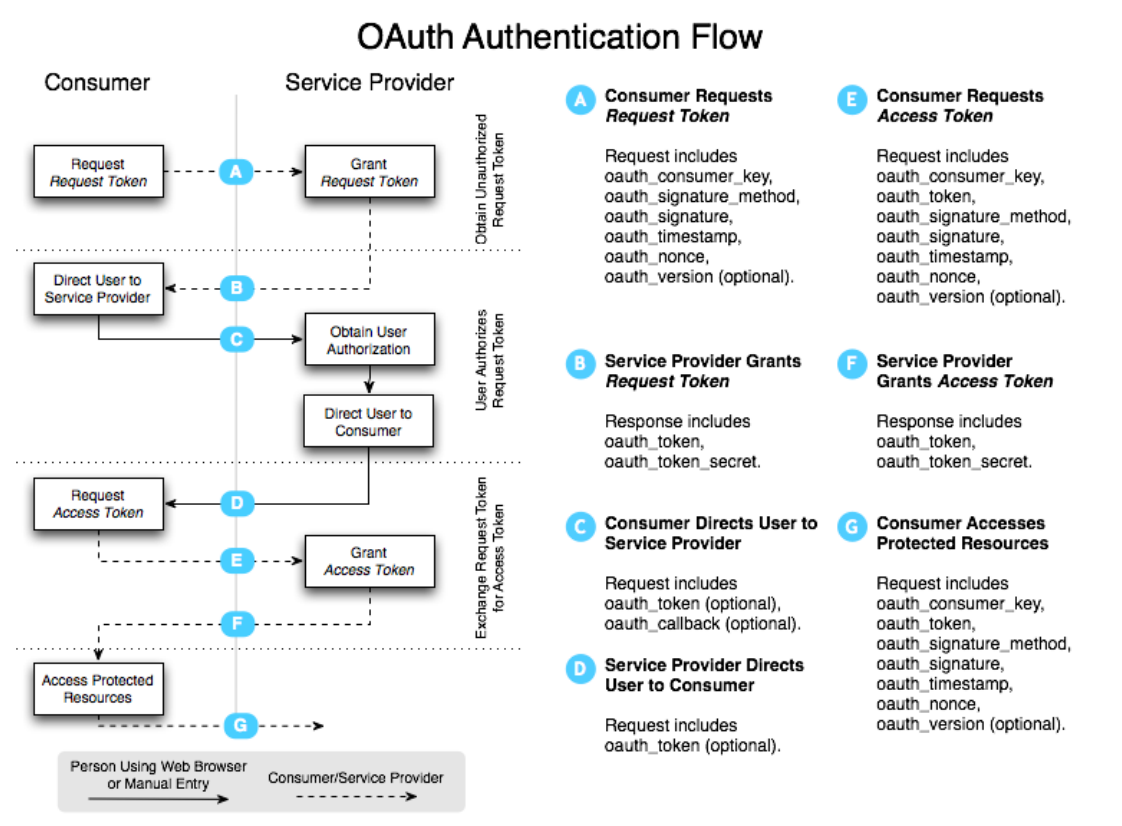
OAuth is a nightmare...



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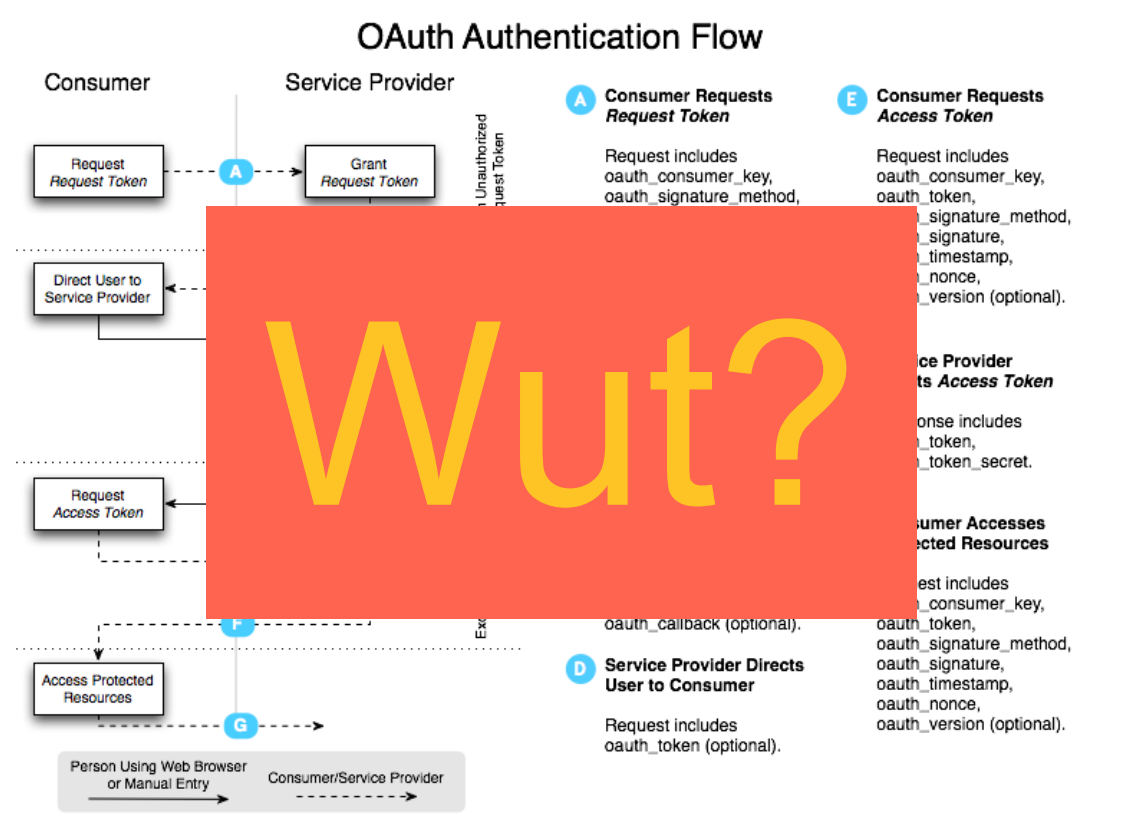

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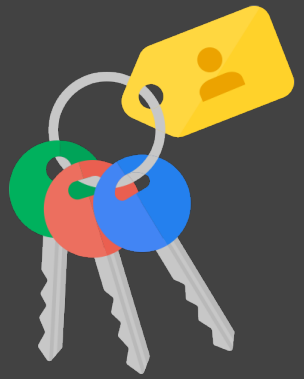
Firebase

A powerful platform for
building extraordinary apps

Firebase Is Your Backend

Realtime Database

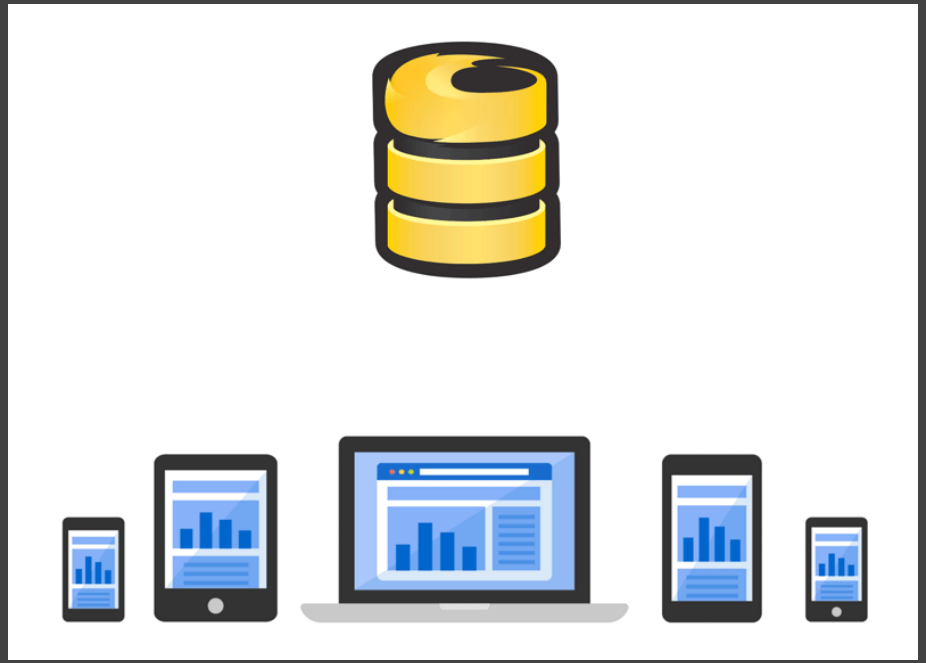


Authentication

Hosting

Cross-platform SDKs

Realtime Sync



Authentication

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JWT-based authentication

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No server required

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Many auth types (anonymous, email, OAuth, etc.)

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Custom auth if you want to make your own JWTs

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No server required

Many auth types (anonymous, email, OAuth, etc.)

Custom auth if you want to make your own JWTs

Works offline

Authenticating Users

```
var ref = new Firebase("https://ng-auth.firebaseio.com");
ref.authWithPassword({
    email: "foo@bar.com",
    password: "correcthorsebatterystaple"
}, function(error, authData) {
    // User authenticated
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Detecting Auth State

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var ref = new Firebase("https://ng-auth.firebaseio.com");
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Creating Users

```
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ref.createUser({
    email: "foo@bar.com",
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}, function(error, userData) {
    // User created
});
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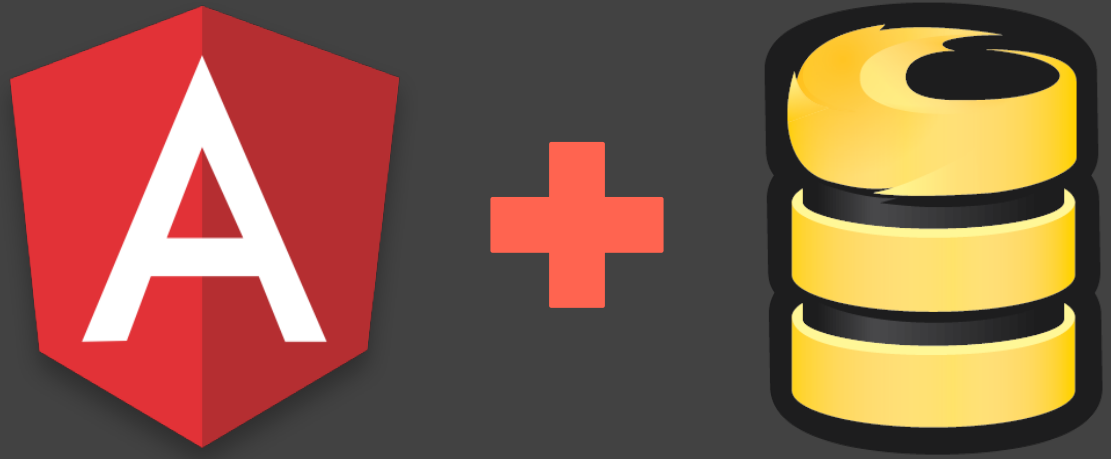
Better Together



AngularFire

AngularFire provides a set of services to bind data between Firebase and Angular and to authenticate and manage users.

AngularFire Services

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`$firebaseArray` - synchronized collections

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`$firebaseObject` - synchronized objects

AngularFire Services

`$firebaseArray` - synchronized collections

`$firebaseObject` - synchronized objects

`$firebaseAuth` - authentication, user management, routing

$firebaseAuth

```
var app = angular.module("app", ["firebase"]);
app.controller("Ctrl", function($scope, $firebaseAuth) {
    var ref = new Firebase("https://...");
    $scope.authObj = $firebaseAuth(ref);
    // ...
});
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$scope.authObj.$onAuth(function(authData) {
    if (authData) {
        // User logged in
    } else {
        // User logged out
    }
});
```

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```

Creating Users

```
$scope.authObj.ref.$createUser({
    email: "foo@bar.com",
    password: "correcthorsebatterystaple"
}).then(function(userData) {
    // User created
}).catch(function(error) {
    // Error creating user
});
```

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Route-based Security

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Helper promises for use in `resolve()`

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`$waitForAuth()`

Route-based Security

Helper promises for use in `resolve()`

`$waitForAuth()`

`$requireAuth()`

Route-based Security

Helper promises for use in `resolve()`

`$waitForAuth()`

`$requireAuth()`

Works with `ngRoute` and `ui-router`

ngRoute

```
$routeProvider.when("/account", {
  controller: "AccountCtrl",
  templateUrl: "views/account.html",
  resolve: {
    currentAuth: function(Auth) {
      return Auth.$waitForAuth();
    }
  }
});
```

ngRoute

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  controller: "AccountCtrl",
  templateUrl: "views/account.html",
  resolve: {
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    }
  }
});
```

ui-router

```
$stateProvider.state("/account", {
  controller: "AccountCtrl",
  templateUrl: "views/account.html",
  resolve: {
    currentAuth: function(Auth) {
      return Auth.$waitForAuth();
    }
  }
});
```

ui-router

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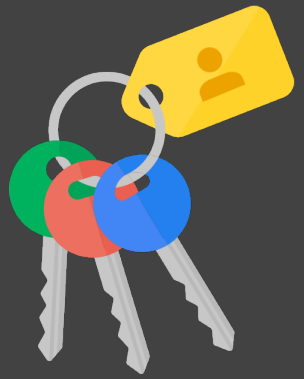
Live Coding

Try The Demo

https://ng-auth.firebaseapp.com

Firebase Is Your Backend

Realtime Database



Authentication

Hosting

Get Started Now!

firebase.com/docs

firebase.com/tutorial

Authentication in Angular

Jacob Wenger / @_jwngr
Firebase / @firebase

https://github.com/jwngr/ng-auth