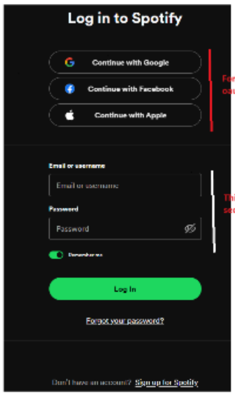
Spring Security With OAuth2.x
==============================
(OAuth :: Open Authorization)

=>Oauth 2.x is an open standard and framework for providing 3rd party application services to Client Apps i.e security to Client Apps using third party Applications.

=> Our Projects or web application behaves like Client Apps trying to use the services of Thrid party Applications for security
=>Examples for Client Apps are swiggy , zomoto , redbus, abhibus, MakeMyTrip , IMobile, shadi.com, BookMyShow , amazon prime , , netflix ,zepto and etc.

=> The third Party Applications are technically called Authorization & Resource Servers
=>Examples for Authorization and Resource Servers are like Facebook ,gmail, twitter , Instagram , linkedin, GitHub and etc..

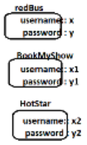
=> Different Client Apps that are listed above tries to use Third party Applications that are listted above for simplifying Login and Authentication activies



For this we need Spring boot oauth2.x

This needs spring boot security

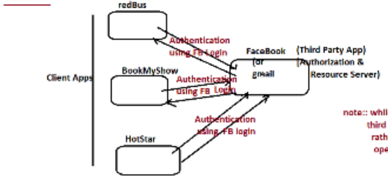
Problem::



(Tradional approach of applying security)

For every app seperate userame,password means .. there is possiblity of forgetting the credentials..

Solution ::


redBus
Client Apps
BookMyShow
HotStar
Authentication using FB Login
Authentication using FB Login
Authentication using FB login
FaceBook (or gmail
(Third Party App) (Authorization & Resource Server)

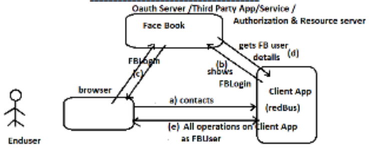
note:: while working with SSO , we are not giving third party App(like gmail) credentials to our Client Apps(like redbus) rather by login to third party App, we are using that user identity to operate various services in the Client app. (redbus)

Oauth 2.x supports SSO (Single Singon Feature) i.e by login to one third party App like FB , Google and we can login multiple other Apps like redbus , bookmyshow and etc..

=> by login to gmail account we can start accessing youtube , google drive , google plus and other google services..

Google's SSO feature

Basic Architecture diagram of OAuth2.x
====================================


Oauth Server /Third Party App/Service /
Authorization & Resource server
Face Book
gets FB user details (d)
(b) shows FBLogin
FBLogin (c)
browser
Client App (redBus)
a) contacts
(e) All operations on Client App as FBUser
Enduser

Oauth 2.x features
==================
=> It is very popular open standard for securing Apps
=> It can be used and implemented in any techinal domain like java ,.net and etc..
=> Spring boot gives lots of abstraction towards using and implementing oauth 2.x service
=> Very much impleneted in Day to day activity Apps like tickBooking Apps, e-commerces Apps and etc..
=> Integration of Client App with Outh2.x is very easy towards connecting and using Third party Service
=> This is not much recomanded to financial services Applications like Bank Account creation , Credit card issuing and etc.. becoz some Third party Services like FB contains lots of fake identities.
=> Allows to implement SSO on Applications as discussed above
=> If we enable oauth 2.x based Login activity in our Client App then there is no need of implementing direct Login seperately in client app development.
[if oauth 2.x is used fully in our Client Apps development then there is no need of implementing spring security forms, spring security ldap , spring security with JWT seperately)

All Thrird party Apps or services like FB ,gmail provides two ways of interactions

a) Direct interaction for enduser (directly use facebook.com)
[To use the services of Third Apps directly as enduser --> eg:: we using FB directly]

b) Interaction as developer
[To make other Client Apps like redBus using Third Party App services]
eg:: Oauth 2.x impl (use developers.facebook.com)

Oauth 2.x Implementation
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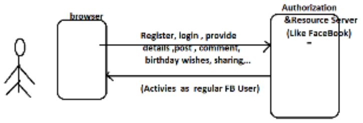
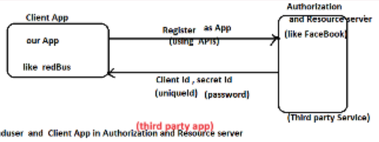
1) Register and provide user Details with Authorization and Resource Server.. (Third Party App)

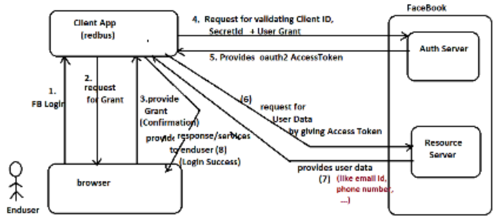

browser
Register, login , provide details ,post , comment, birthday wishes, sharing,..
(Activies as regular FB User)
Authorization &Resource Server (Like FaceBook)

2.) Register our Client App with Auhorization and Resource server (Third Party App or Service) to get Client ID and SecretId
[For this we need to use Third Party App or service provided API as Developer]



Client Id is like username
Secret Id is like Password

3) Valid ate Enduser and Client App in Authorization and Resource server (third party app)
FB , Gmail , Linked In and etc.. maintains two parts
a) Authorization Server :: Contains authentication logic (FB Login)
b) Resource Server :: gives access to various details of authenticated user (getting FB User details) (public info)


Client App (redbus)
4. Request for validating Client ID, SecretId + User Grant
5. Provides oauth2 AccessToken
FaceBook
Auth Server
Resource Server
1. FB Login
2. request for Grant
3.provide Grant (Confirmation)
provide response/services to enduser (8) (Login Success)
(6) request for User Data by giving Access Token
provides user data (7) (like email id, phone number, ...)
browser
Enduser

It is the reposbility of the Developer to register the client App (like redbus , spotify) with Third party App (like FB , Gmail and etc.) to get Client id and secretId

with respect to diagram of step3
----
(1) In browser that is pointing client App screen (redbus screen) enduser clicks on FB Login

Spring Security With OAuth2.x

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=> Different Client Apps that are listed above tries to use Third party Applications that are listted above for simplifying Login and Authentication activies Problem::

redBus

username:: x password: y

BookMyShow username: x1 password: y1

HotStar

(Tradional approach of applying security)

For every app seperate

userame, password means.. there is possiblity

of forgetting the credentials..

ЭТО

username: x2 password y2

Solution ::

redBus

Authentication using FB Login

BookMyShow

Client Apps

Authentication using FB Login

FaceBook for gmail

(Third Party App)

Authorization &

Resource Server)

Authentication sing FB login

HotStar

Log in to Spotify

G

Continue with Google

Continue with Facebook

For this we need Spring boot uth2.x

Continue with Apple

Email or username

Email or username

Password

This needs spring boot security

Password

Remember me

Log In

Forgot your password?

Don't have an account? Sign up for Spotify

note:: while working with SSO, we are not giving

third party App(like gmail) credentials to our Client Apps (like redbus) rather by login to third party App, we are using that user identity to operate various services in the Client app.

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Basic Architecture diagram of OAuth2.x

Oauth Server/Third Party App/Service / Face Book

off

Enduser

browser

FBLogin

Authorization & Resource server

gets FB user

details

(d)

(b) shows

FBLogin

a) contacts

Client App (redBus)

(e) All operations on Client App as FBUser

(redbus)

Google's SSO feature

Oauth 2.x

======

features

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[To make other Client Apps like redBus using Third Party App services] eg:: Oauth 2.x impl

(use developers.facebook.com)

Login to Internet Banking

User ID

OR

Registered Mobile Number

Gel User ID

Login with QR Code >

Oauth 2.x Implementation

===============

(Third Party App)

1) Register and provide user Details with Authorization and Resource Server..

browser

Authorization

&Resource Server

Register, login, provide details,post, comment, birthday wishes, sharing,..

(Activies as regular FB User)

(Like FaceBook)

2.) Register our Client App with Auhorization and Resource server (Third Party App or Service) to get Client ID [For this we need to use Third Party App or service provided API as Developer)

and SecretId

Client App

our App

like redBus

Authorization

Register as App (using APIs)

and Resource server (like FaceBook)

Client id is like username Secret Id is like Password

Client Id, secret Id (uniqueId) (password)

(Third party Service)

ate

(third party app)

3) Valid Enduser and Client App in Authorization and Resource server

FB, Gmail, Linked In and etc.. maintains two parts

a) Authorization Server :: Contains authentication logic (FB Login)

b) Resource Server :: gives access to various details of (getting FB User details) authenticated user

(public info)

FaceBook

Client App (redbus)

2.

request

1.

FB Login

Enduser

for Grant 3.provide

Grant

browser

to

4. Request for validating Client ID,

(Confirmation)

SecretId + User Grant

Auth Server

5. Provides oauth2 AccessToken

(6)

request for

User Data

provide response/services

to enduser (8)

(Login Success)

by giving Access Token

Resource Server

provides user data

(7) (like email Id,

phone number, ...)

with respect diagram of step3

(1) In browser that is pointing client App screen (redbus screen) enduser clicks on FB Login

(2) The Client App (redbus) makes you provide login Credentials of FB to provide permission to use FB user details (request for access grant)

(3) Once we complete FB Login and "continue as certain ___<user> 'we can say Access Granted (Permission provided)

It is the reposbility of the Developer to register the client App (like redbus, spotify) with Third party App (like FB, Gmail and etc.) to get Client id and secretId

(client App is validated)

(4) Client App(red Bus) goes to Auth Server of FB for Client App, user details Validation by carrying Client id, scretId

(5) FB Auth Server validates the Client App and user provides one Access Token (ID) which is valid for current

user and current Client App to perform certains operation in the Resourceifenduser tries to change it then it will not work) to

(6) Client App (redbus) makes a request Resource Server of FB having that access Token (ID)

(7) Resource Server of FB validates the access Token provides the required and permitted UserData to Client App

(8) Finally Client App gets UserData and uses that data to provide. various services to Enduser.

(http://localhost:4041)

Registering our web application (Client App) with FB to get Client Id and SecretId

a) Go to FB developers url (https://developers.facebook.com)

(if not logged into FB account .. u need to login now)

b) Create FB Application by clicking "create Application Button"

FB Developers home page ---> my aps ---create App

c) Choose "Bussines" Type App --->next

d) provide the following details

App name :: NITFBApp

email Id ::

create App ---> submit the FB password

e) Gather Client App/App Id, secret Id of the App ..

Dashboard ---->settings--> basic --->

App ID

531577848170095

App secret

ebbe102f51e507100ea43b3973e5a96b