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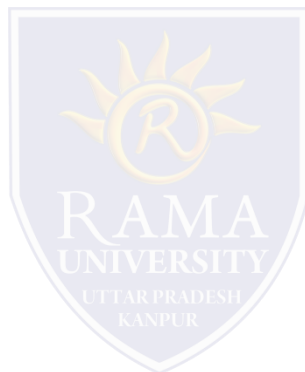
**FACULTY OF ENGINEERING & TECHNOLOGY
MOBILE SECURITY**

LECTURE -22

Umesh Kumar Gera
Assistant Professor
Computer Science & Engineering

OUTLINE

- **What Is OAuth?**
- **Why OAuth?**
- **OAuth Central Components**
- **OAuth Actors**
- **OAuth Tokens**
- **SAML**
- **References**



WHAT IS OAUTH

What Is OAuth?

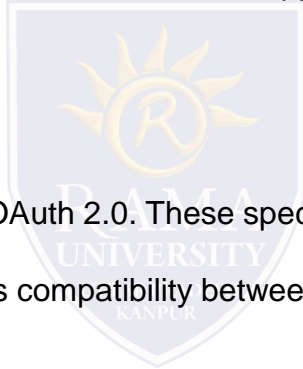
To begin at a high level, OAuth is not an API or a service: it's an open standard for authorization and anyone can implement it. More specifically, OAuth is a standard that apps can use to provide client applications with “secure delegated access”.

OAuth works over HTTPS and authorizes devices, APIs, servers, and applications with access tokens rather than credentials.

NOTE:

There are two versions of OAuth: OAuth 1.0a and OAuth 2.0. These specifications are completely different from one another, and cannot be used together: there is no backwards compatibility between them.

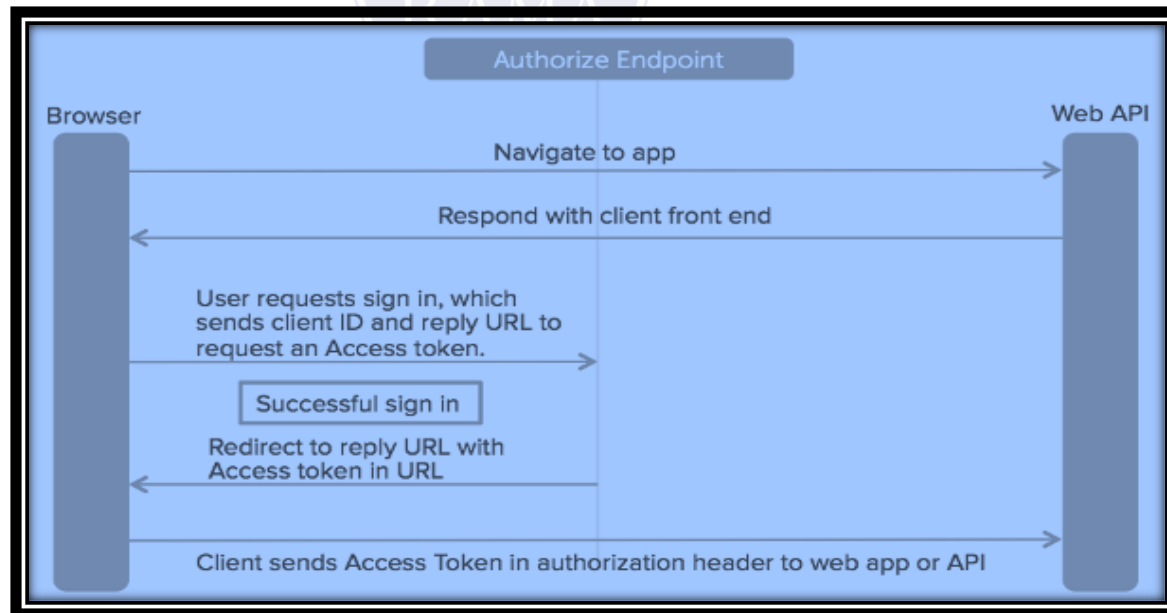
Here all the discussion is based on OAuth 2.0.



WHAT IS OAUTH

Why OAuth?

OAuth2.0 was created as a response to the direct authentication pattern. This pattern was made famous by HTTP Basic Authentication, where the user is prompted for a username and password. Basic Authentication is still used as a primitive form of API authentication for server-side applications: instead of sending a username and password to the server with each request, the user sends an API key ID and secret. Before OAuth2.0, sites would prompt you to enter your username and password directly into a form and they would login to your data (e.g. your Gmail account) as you. This is often called the password anti-pattern.



WHAT IS OAUTH

OAuth Central Components

OAuth is built on the following central components:

- ✓ Scopes and Consent
- ✓ Actors
- ✓ Clients
- ✓ Tokens
- ✓ Authorization Server
- ✓ Flows



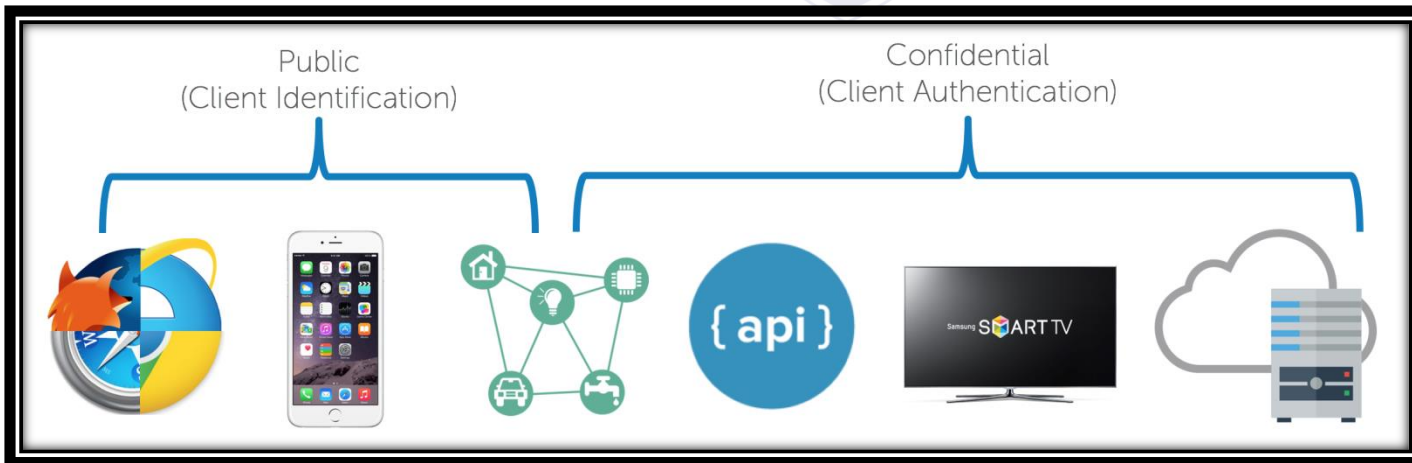
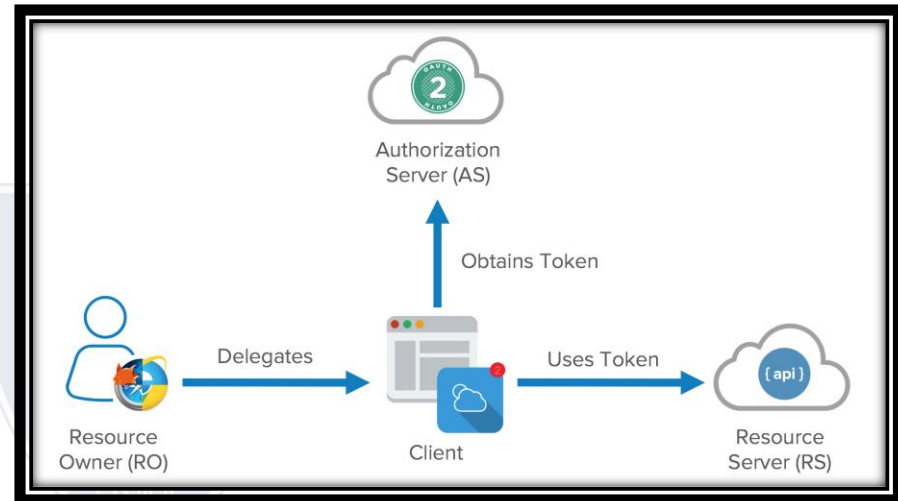
OAuth Actors

The actors in OAuth flows are as follows:

- ✓ Resource Owner: owns the data in the resource server. For example, I'm the Resource Owner of my Facebook profile.
- ✓ Resource Server: The API which stores data the application wants to access
- ✓ Client: the application that wants to access your data
- ✓ Authorization Server: The main engine of OAuth

WHAT IS OAUTH

OAuth Actors relationships through diagram

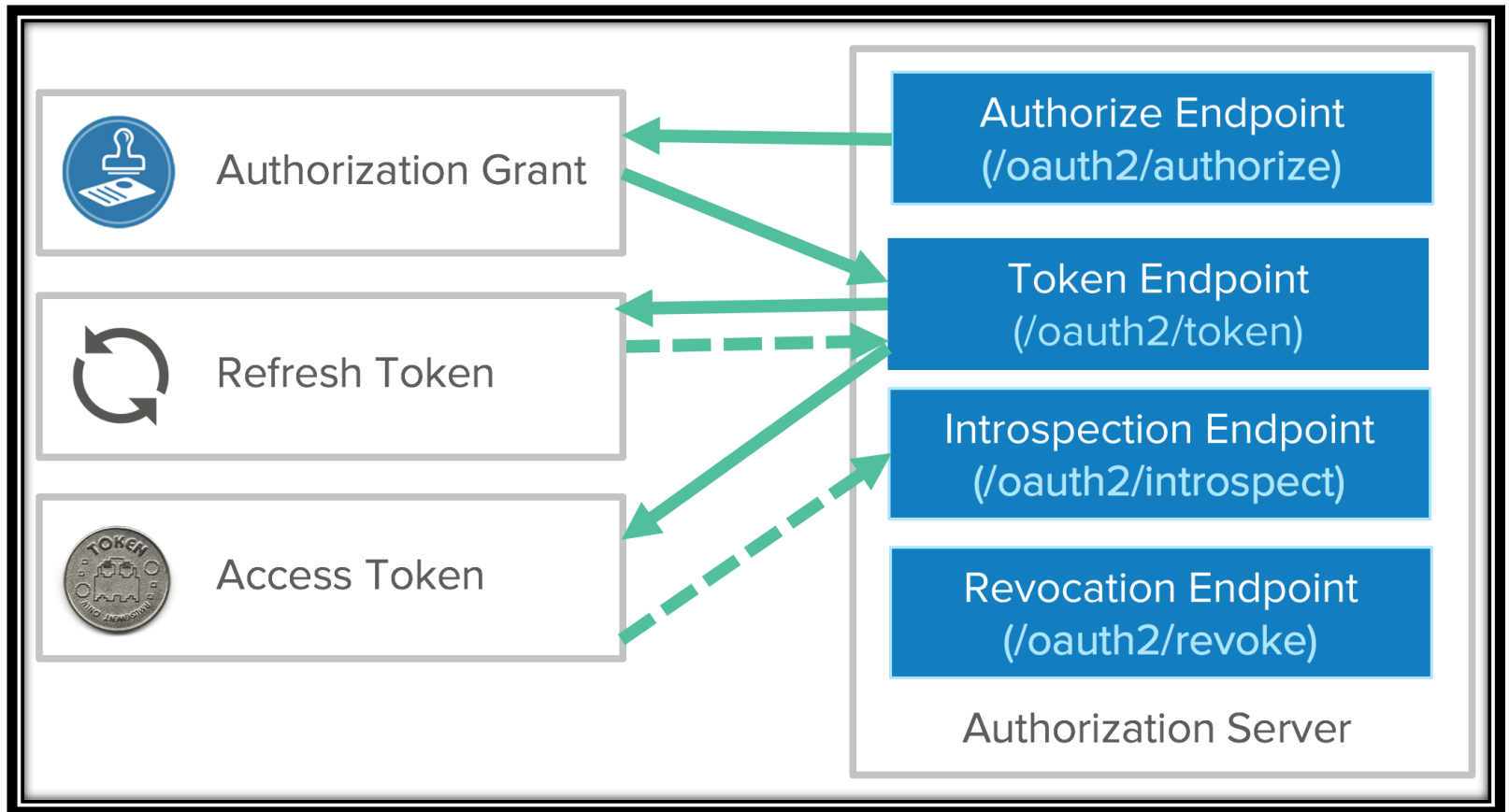


WHAT IS OAUTH

OAuth Tokens

There are three major tokens are used in Oauth

Authorization grant, Refresh token, Access token.

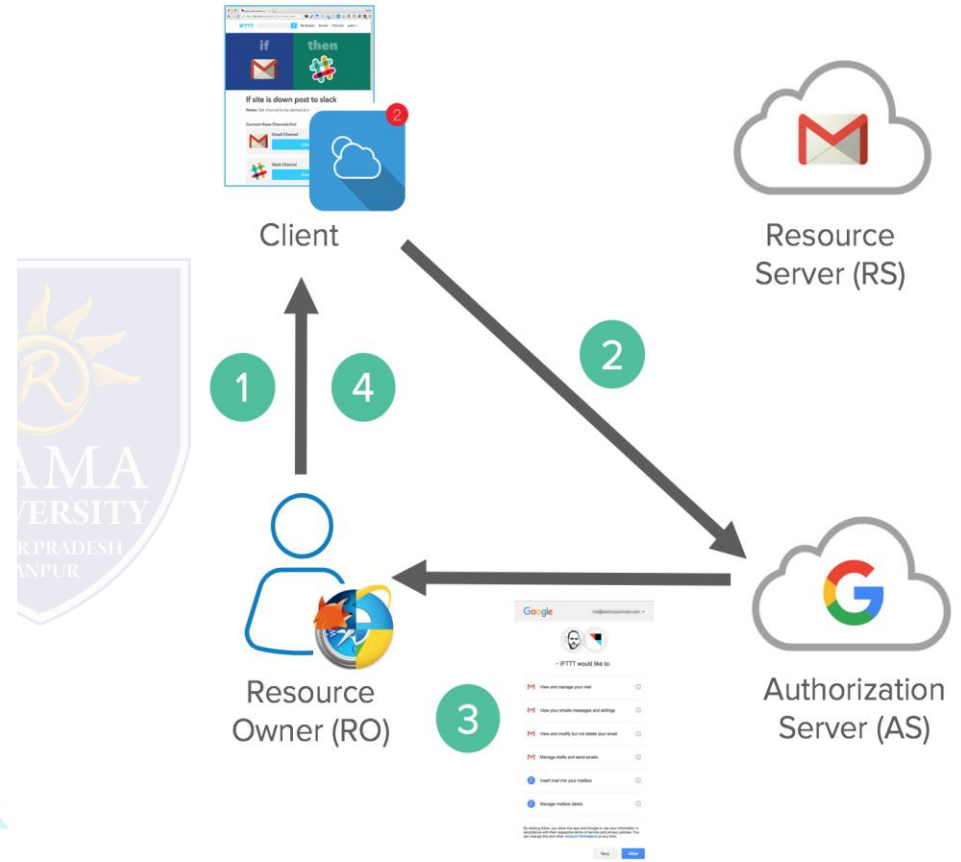
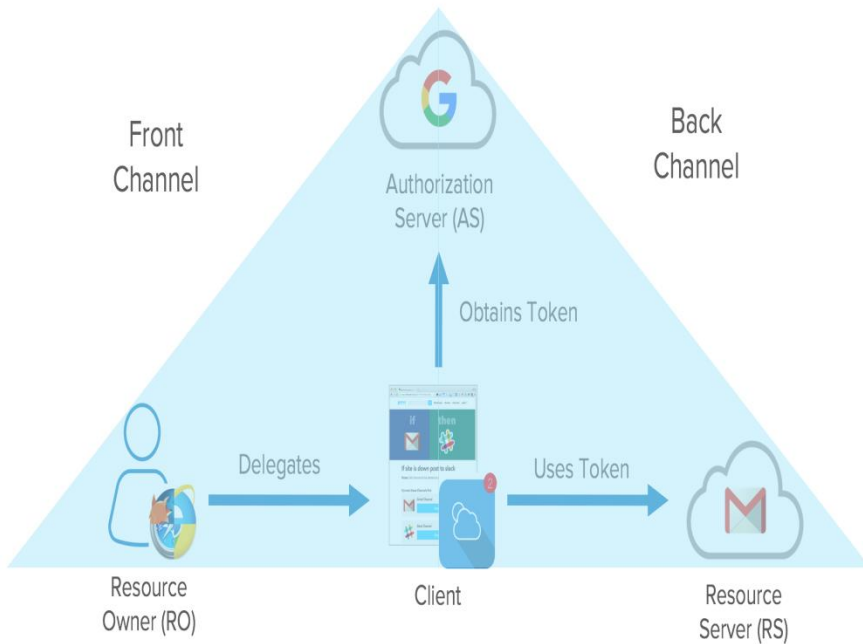


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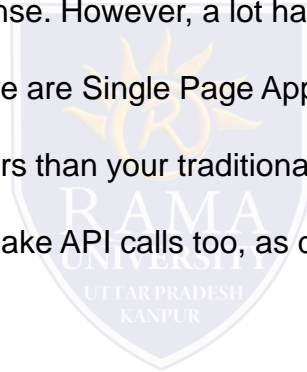


WHAT IS OAUTH

SAML

SAML is basically a session cookie in your browser that gives you access to webapps. It's limited in the kinds of device profiles and scenarios you might want to do outside of a web browser.

When SAML 2.0 was launched in 2005, it made sense. However, a lot has changed since then. Now we have modern web and native application development platforms. There are Single Page Applications (SPAs) like Gmail/Google Inbox, Facebook, and Twitter. They have different behaviors than your traditional web application, because they make AJAX (background HTTP calls) to APIs. Mobile phones make API calls too, as do TVs, gaming consoles, and IoT devices. SAML SSO isn't particularly good at any of this.



MCQ

Q 1 - How to get a response from an activity in Android?

- A - startActivityToResult()
- B - startActiivtyForResult()
- C - Bundle()
- D - None of the above

Q 2 -How to move services to foreground in android?

- A - Services always work in Foreground only
- B - No,We can't do this query
- C - Using startService(Intent intent)
- D - startFordgroud(int id, Notification notification).

Q 3 -What are the functionalities of Binder services in android?

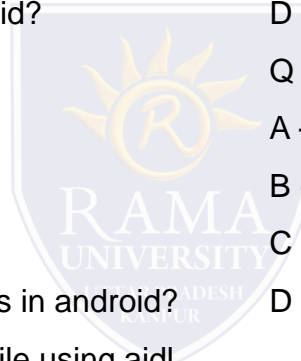
- A - Binder is responsible to manage the thread while using aidl in android
- B - Binder is responsible for marshalling and un-marshalling of the data
- C - A & B
- D - Binder is a kind of interface
- E - None of the above

Q 4 - What is the use of content provider in android?

- A - To send the data from an application to another application
- B - To store the data in a database
- C - To share the data between applications
- D - None of the above.

Q 5 -What is the 9 patch tool in android?

- A - Using with tool, we can redraw images in 9 sections.
- B - image extension tool
- C - image editable tool
- D - Device features



REFERENCES

- ❑ <https://developer.okta.com/blog/2017/06/21/what-the-heck-is-oauth>

