

# Using Core Kit SFA Android SDK

After successfully installing and initializing SingleFactorAuth, you can use it to authenticate your users and obtain their private and public keys.

The SingleFactorAuth instance natively provides the following functions:

- getKey()
- - Returns the torus key using the verifier
- ,verifierId
- &idToken
- .

## getKey()

[^](#)

getKey()

To obtain a user's Torus key using the Web3Auth SFA Android SDK, you can call the `getKey()` function.

Variable Type Description Mandatory loginParams object Login Parameters Yes

### Returns [^](#)

public

CompletableFuture < TorusKey

getKey ( LoginParams loginParams ) On successful call, the `getKey()` function returns a `CompletableFuture` instance.

### LoginParams

[^](#)

getKey(loginParams: LoginParams)

- Table
- Type

Parameter Type Description Mandatory verifier string Details of the verifier (verifier type, ie.torus ,metamask ,openlogin etc.)  
Yes verifierId string Verifier ID's value,sub oremail value present in the idToken. Yes idToken string A newly createdJWT  
Token that has not already been sent to Web3Auth or aDuplicate Token error will be thrown. Yes subVerifierInfoArray?  
TorusSubVerifierInfo[] Sub verifier info No export type LoginParams

=

```
{ verifier : string , verifierId : string , idToken : string , subVerifierInfoArray ? :
```

```
TorusSubVerifierInfo [ ] , } ; Usage loginParams =
```

```
LoginParams ( "YOUR_VERIFIER_NAME" ,
```

```
"YOUR_VERIFIER_ID" ,
```

```
"YOUR_ID_TOKEN" ) ; torusKey = singleFactorAuth . getKey ( loginParams ) . get ( ) ; Note Web3Auth SFA Android SDK  
only works for users who havenot enabled MFA . MFA enabled users For MFA enabled users, you'll see an Error message.
```

## Example [^](#)

```
import android . widget . Button import android . os . Bundle import com . github . web3auth . singlefactorauth .  
SingleFactorAuth import com . github . web3auth . singlefactorauth . types . SingleFactorAuthArgs import com . github .  
web3auth . singlefactorauth . types . LoginParams import com . github . web3auth . singlefactorauth . types . TorusKey  
import org . torusresearch . fetchnodedetails . types . TorusNetwork import com . auth0 . android . jwt . JWT
```

```
class MainActivity :
```

```
AppCompatActivity ( )
```

```

{ // ... private

lateinit

var singleFactorAuth : SingleFactorAuth private

lateinit

var singleFactorAuthArgs : SingleFactorAuthArgs private

lateinit

var loginParams : LoginParams private

var torusKey : TorusKey ?

=

null

override

fun

onCreate ( savedInstanceState : Bundle ? )

{ super . onCreate ( savedInstanceState ) setContentView ( R . layout . activity_main )

```

## singleFactorAuthArgs

```

SingleFactorAuthArgs ( TorusNetwork . TESTNET ) singleFactorAuth =

SingleFactorAuth ( singleFactorAuthArgs )

// Setup UI and event handlers val signInButton = findViewById < Button

    ( R . id . signIn ) signInButton . setOnClickListener

{

signIn ( )

} }

private

fun

signIn ( )

{ val jwt =

JWT ( idToken )

// idToken is the JWT token obtained from auth provider or your custom JWT provider val sub = jwt . getClaim ( "sub" ) .

asString ( )

// get sub claims loginParams =

LoginParams ( "web3auth-firebase-examples" ,

"

sub " ,

"

idToken " ) try

{ torusKey = singleFactorAuth . getKey ( loginParams ) . get ( ) }

catch

```

```
( e : ExecutionException )
```

```
{ e . printStackTrace ( ) }
```

```
catch
```

```
( e : InterruptedException )
```

```
{ e . printStackTrace ( ) } println ( ""Private Key: { torusKey !! . privateKey . toString ( 16 ) } "" . trimIndent ( ) ) println (
""Public Address: { torusKey !! . publicAddress } "" . trimIndent ( ) ) //... } Example You can have a look at thethis example
made on top of this SDK and try it out yourself. Edit this page Previous Authentication Next Web3Auth Core Kit Single Factor
Auth iOS SDK
```