Confidential Clients

Overview

When accessing a resource protected by the MobileFirst Platform framework, the MobileFirst Foundation client SDK (for Cordova, iOS, Android and Windows) provide the tools to handle the security features.

Clients that do not use the MobileFirst client SDK can also request protected resources, by acting as a **confidential client**.
For example, your backend server may need to request a protected resource, or use one of the MobileFirst Foundation **REST APIs** such as **Push Notifications**.

Registered confidential clients can obtain a token to be used in all requests to the MobileFirst Server. This flow is based on the client credentials flow (https://tools.ietf.org/html/rfc6749#section-1.3.4) of the OAuth specification.

Registering the confidential client

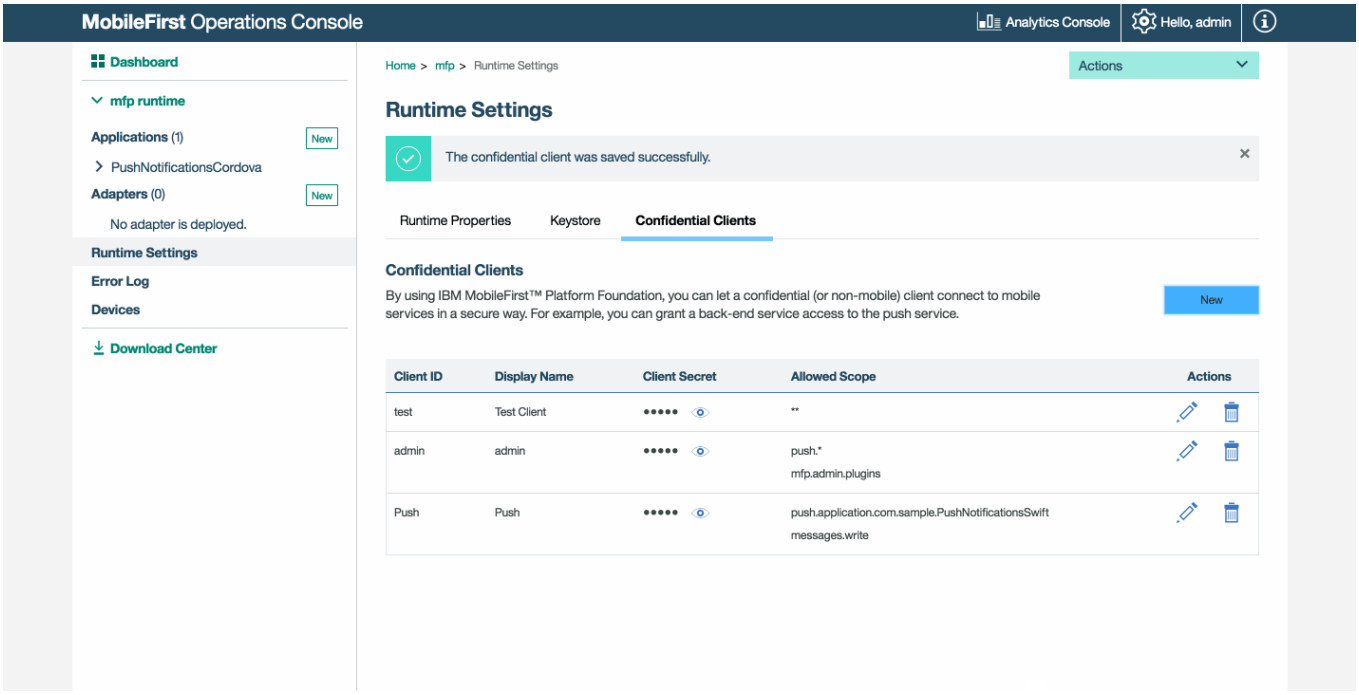
In the MobileFirst Operations Console, under **Settings** → **Confidential Clients**, click on **Create New** to add a new entry. You will need to provide the following:

- **Display Name**: A friendly display name that describes the confidential client, such as **Backend Node server**.
- **ID**: A unique identifier for the confidential client (can be considered as a "username").
- **Secret**: A private passphrase to authorize access from confidential client (can be considered as an API key).
- **Allowed Scope**: A confidential client using the above ID and Secret combination will automatically be granted the scope that is defined here (learn more about **Scopes** in the Authorization Concepts (../authorization-concepts/#scope) tutorial).

Examples of scopes:

- Protecting external resources (../protecting-external-resources) uses the scope `authorization.introspect`.
- Sending a Push Notification (../../notifications/sending-push-notifications) via the REST API uses the space-separated scope elements `messages.write` and `push.application.<applicationId>`.
- Adapters may be protected by a custom scope element, such as `accessRestricted`.
- The scope `*` is a catch-all scope, granting access to any requested scope.

Any scope can use the `*` character to replace any other valid character. For example `push.application.*` would match any `push.application.<applicationId>`.



Predefined confidential clients

The MobileFirst Platform Server comes with some predefined confidential clients:

test

The `test` client is only available in development mode. It allows you easily to test your resources.

- **ID**: `test`
- **Secret**: `test`
- **Allowed Scope**: `*` (any scope)

admin

The `admin` client is used internally by the MobileFirst Foundation administration service.

push

The `push` client is used internally by the MobileFirst Foundation push service.

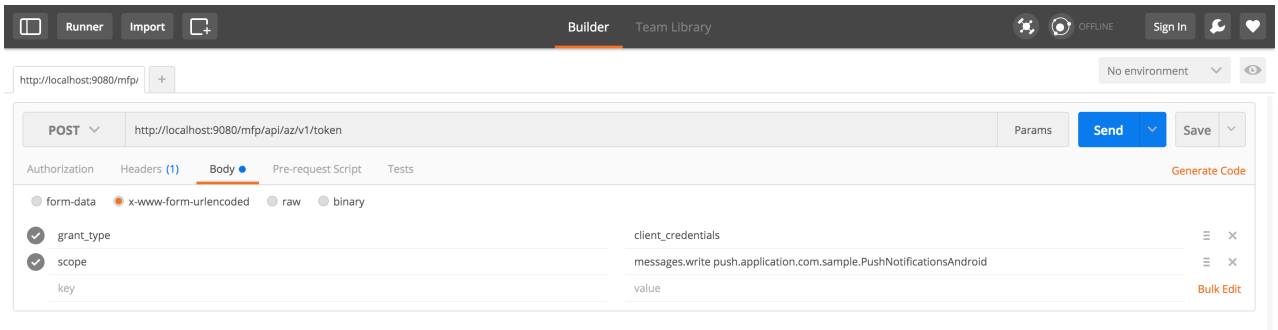
Obtaining an access token

A token can be obtained from MobileFirst Server's **token endpoint**.

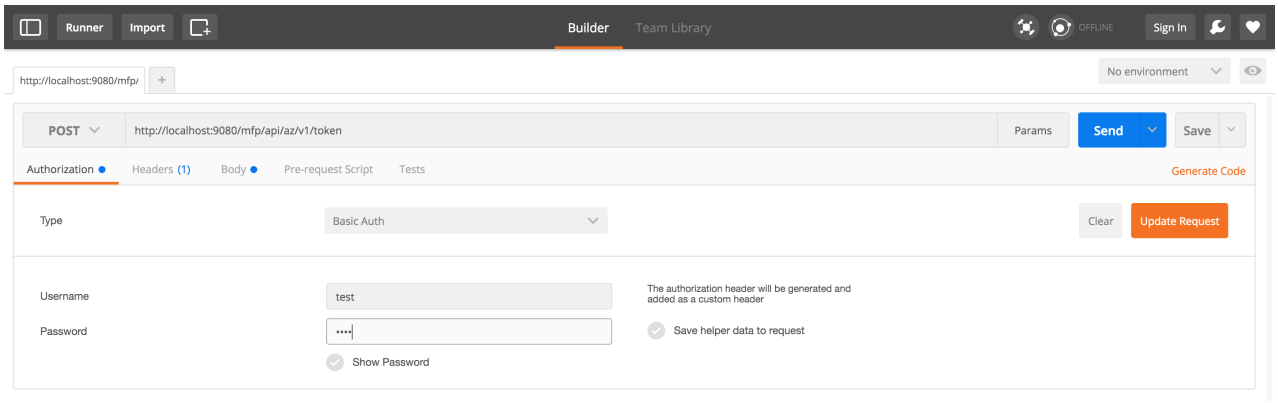
For **testing purposes**, you can use Postman as described below.
In a real setting, the bellow should be implemented in your backend logic, with the technology of your choice.

1. Make a **POST** request to **http(s)://[ipaddress-or-hostname]:[port]/[runtime]/api/az/v1/token**.
   For example: `http://localhost:9080/mfp/api/az/v1/token`
   - In a development environment, the MobileFirst Server uses a pre-existing "mfp" runtime.
   - In a production environment, replace the runtime value with your runtime name.
2. Set the request with a content-type of `application/x-www-form-urlencoded`.
3. Set the following two form parameters:

- `grant_type`: `client_credentials`
- `scope`: Use the scope protecting the resource.
  If you don't use a scope to protect your resource, use an empty string.



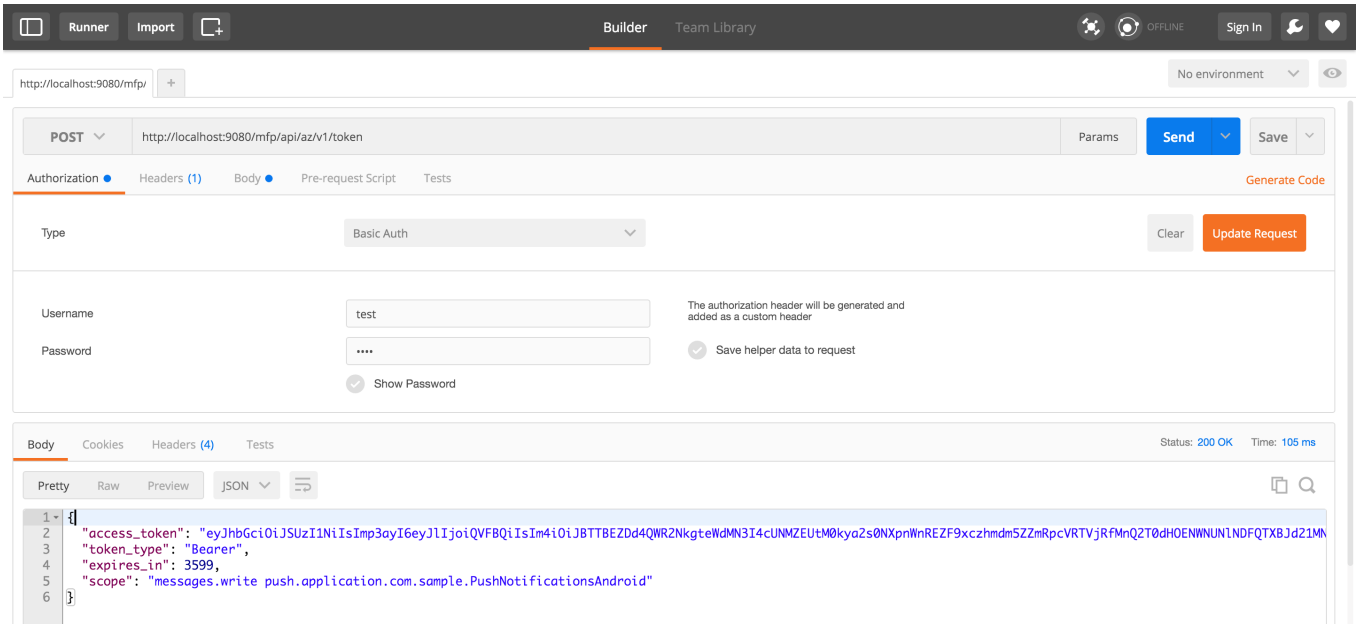
4. The request should be authenticated using Basic Authentication (https://en.wikipedia.org/wiki/Basic_access_authentication#Client_side). Use your confidential client's **ID** and **secret**.



   Outside of Postman, if using the **test** confidential client, you should have the **HTTP header** set to `Authorization: Basic dGVzdDp0ZXN0` (`test:test` encoded using **base64**).

The response for this request will contain a `JSON` object, including the **access token** and its expiration time (1 hour).

```
{
  "access_token": "eyJhbGciOiJSUzI1NiIsImp ...",
  "token_type": "Bearer",
  "expires_in": 3599,
  "scope": "sendMessage accessRestricted"
}
```



Using the access token

From here on, requests can be made to the desired resources by adding the **HTTP header**: `Authorization: Bearer eyJhbGciOiJSUzI1NiIsImp ...`, replacing the access token by the one you extracted from the previous JSON object.

Possible responses

In addition to the normal responses that your resource may generate, there are a few responses to look out for, generated by the MobileFirst Platform server:

Bearer

An HTTP **401** response status with the HTTP header `WWW-Authenticate : Bearer` means that no token was found on the `Authorization` header of the original request.

invalid_token

An HTTP **401** response status with the HTTP header `WWW-Authenticate: Bearer error="invalid_token"` means that the token that was sent is **invalid** or **expired**.

insufficient_scope

An HTTP **403** response status with the HTTP header `WWW-Authenticate : Bearer error="insufficient_scope", scope="scopeA scopeB"` means that the token found in the original request did not match the **scope required by this resource**. The header also includes the scope it expected.

When making a request, if you do not know which scope is required by the resource, `insufficient_scope` is the way to determine the answer.
For example, request a token with an empty string (`""`) as the scope value and make a request to the resource. Then, you can extract the required scope from the 403 response and request a new token for this scope.