

On GitHub Integrations

Concept of delivering a service
in a seamless way

...meaning:

- Performs actions using its own identity
- Provides service at the account level
- Doesn't break if the user who set it up left the organization
- Doesn't have access to the repositories it's not installed on
- Has built-in webhooks
- Has very targeted, granular permissions

How it works

When installed on a repository:

Webhook event → Event handler → (Processing event) ↓

← Performs action with GitHub API

Just like OAuth app

Real difference: Authentication

1. Integration ID + private PEM certificate \Rightarrow JSON web token:

```
let jwt = require('jsonwebtoken');  
let iToken = jwt.sign(  
  {iss: cfg.github.credentials.integrationId},  
  cfg.github.credentials.privatePEM,  
  {algorithm: 'RS256', expiresIn: '1m'});
```

2. Authenticate as integration:

```
github.authenticate({type: 'integration', token: iToken});
```

or

```
curl -i -H "Authorization: Bearer $JWT" )
```

Authentication continues

3. Get installation ID \Rightarrow installation token:

or

Authentication continues

4. Authenticate as installation (valid for 1 hour):

```
github.authenticate({type: 'token', token: instaToken.token});
```

or

```
curl -i -H "Authorization: token $INSTALLATION_TOKEN" \  
-H "Accept: application/vnd.github.machine-man-preview+json" \  
https://api.github.com/installations/  
:installation_id/access_tokens
```