When Single Sign On is not enough: Supporting multiple authentication methods in Kibana

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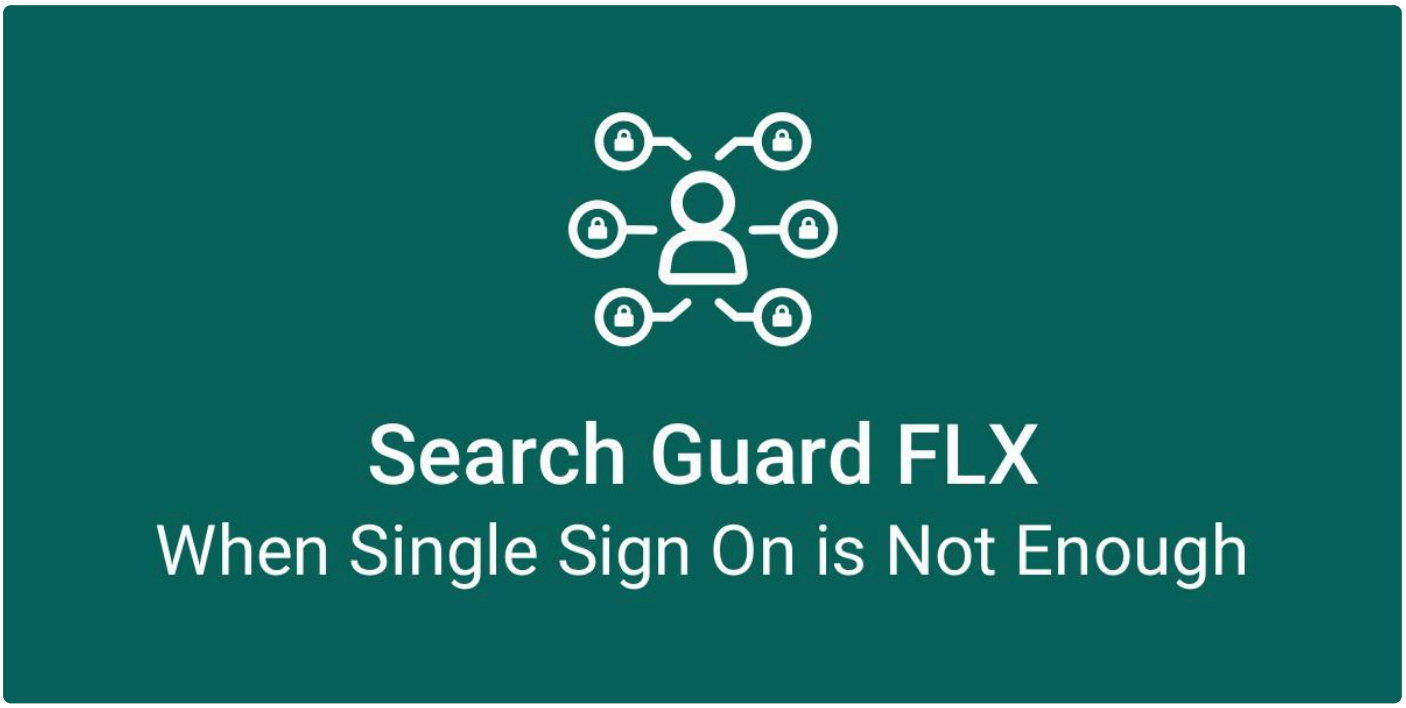


How Kibana authentication worked so far

Search Guard comes as two separate plugins: One plugin for the Elasticsearch backend, and one plugin for Kibana frontend. Traditionally, both plugins had a separate configuration, and it was your task to make sure that the Elasticsearch and the Kibana configuration matched.

For example, if you wanted to uses OIDC as login method, part of the configuration had to be placed in sg_config.yml, and some configuration had to be placed in kibana.yml.

sg_config.yml:

```
openid_auth_domain:
  http_enabled: true
  order: 0
  http_authenticator:
    type: openid
    challenge: false
    config:
      subject_key: preferred_username
      roles_key: roles
      openid_connect_url: https://keycloak.example.com/auth/realms/master/.well-known/openid-
configuration
  authentication_backend:
    type: noop
```

kibana.yml:

```
# Enable OpenID authentication
searchguard.auth.type: "openid"

# the ID of the OpenID Connect client in your IdP
searchguard.openid.client_id: "<client id>"

# the client secret of the OpenID Connect client
searchguard.openid.client_secret: "<client secret>"

# optional: the scope of the identity token
searchguard.openid.scope: "profile email"

# optional: the logout URL of your IdP
# Only necessary if your IdP does not publish the logout url
# in the metadata
searchguard.openid.logout_url:
"https://keycloak.example.com:8080/auth/realms/master/protocol/openid-connect/logout"
```

Previous Limitations

This of course is error-prone since you need to make sure both configs are in sync. In addition, because parts of the configuration are stored in kibana.yml, any change required a restart of Kibana.

Moreover, this approach only supported one login method: You could choose between password-based authentication and SSO authentication, but you could not have both. There was also no support for multiple Identity Providers.

Let's see how we can implement this with Search Guard FLX.

New Configuration Structure

Search Guard FLX now stores also the configuration for Kibana in the Search Guard configuration index. This means:

- All configuration settings are stored in one central place. No more thinking about where to configure a particular aspect of your security settings.
- Hot-reloadable: Now also the Kibana configuration benefits from the hot-reload capabilities of the Search Guard configuration. Change your frontend settings in real-time and without restarting Kibana
- Support for multiple authentication types in Kibana

The configuration is now split between Elasticsearch and Kibana like:

- **sg_authc.yml** Contains the configuration relevant for Elasticsearch. This file replaces the former sg_config.yml.
- **sg_frontend_authc.yml** Contains the configuration that is only relevant for Kibana

Setting up multiple authentication types

Basic Setup: Internal user database

Let's start with setting up authentication based on username and password. In our example, we use the internal user database, but you might as well use LDAP.

First, let's configure Elasticsearch to use the internal user database. For this, just add the following to sg_authc.yml:

```
auth_domains:
- type: basic/internal_users_db
```

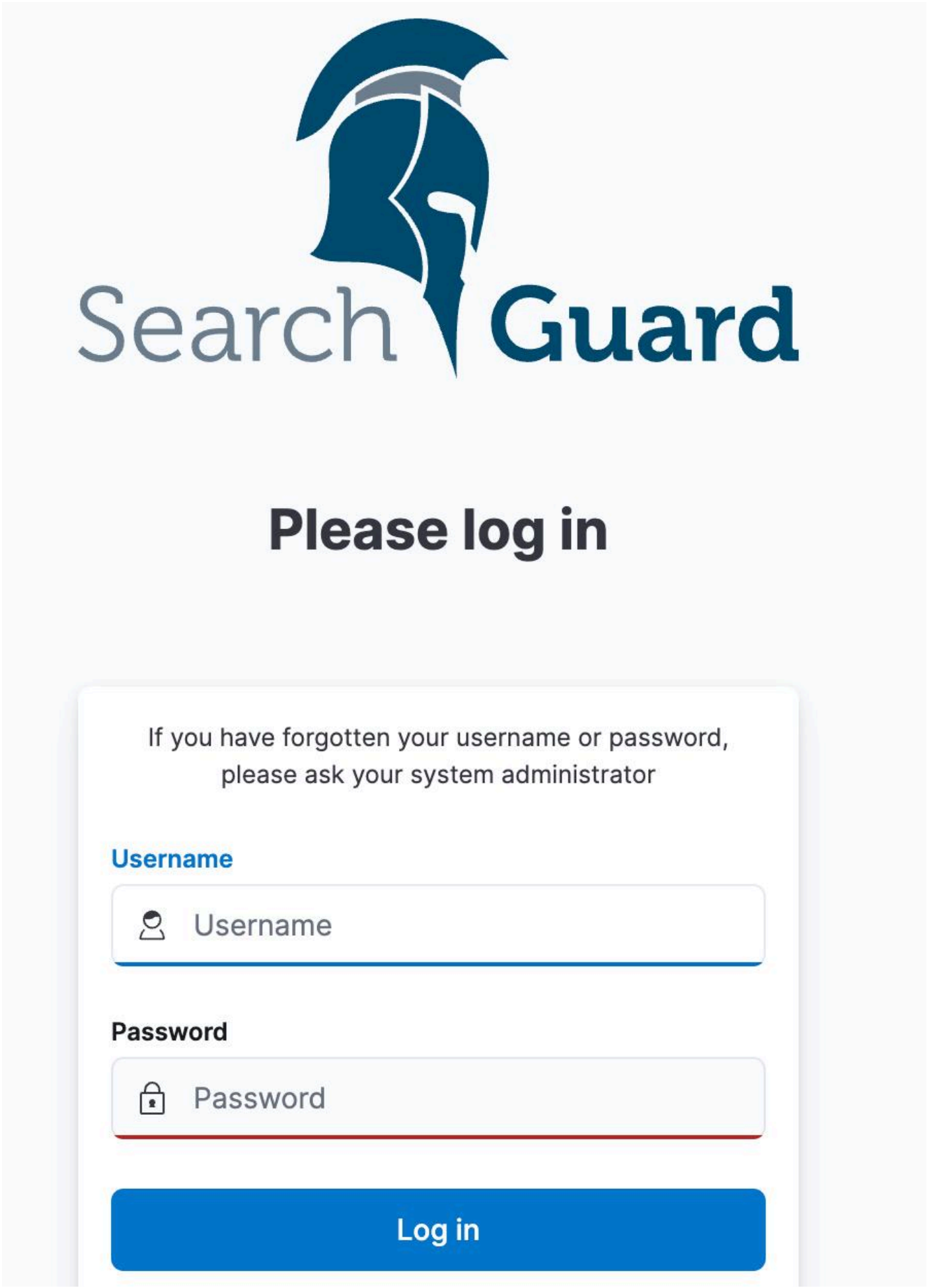
In sg_frontend_authc.yml, add:

```
default:
  auth_domains:
  - type: basic
```

And then upload the configuration with sgctl. If your configuration files are located in the directly "my-sg-config" the call looks like this:

```
./sgctl.sh update-config ./my-sg-config
```

If you now open Kibana you are welcomed with the usual login screen:


Search Guard
Please log in
If you have forgotten your username or password, please ask your system administrator
Username
Username
Password
Password
Log in

Adding OIDC to Kibana

The next thing we want to do is add OIDC authentication. We want to give the user the choice of whether to use OIDC for login, or plain old username and password.

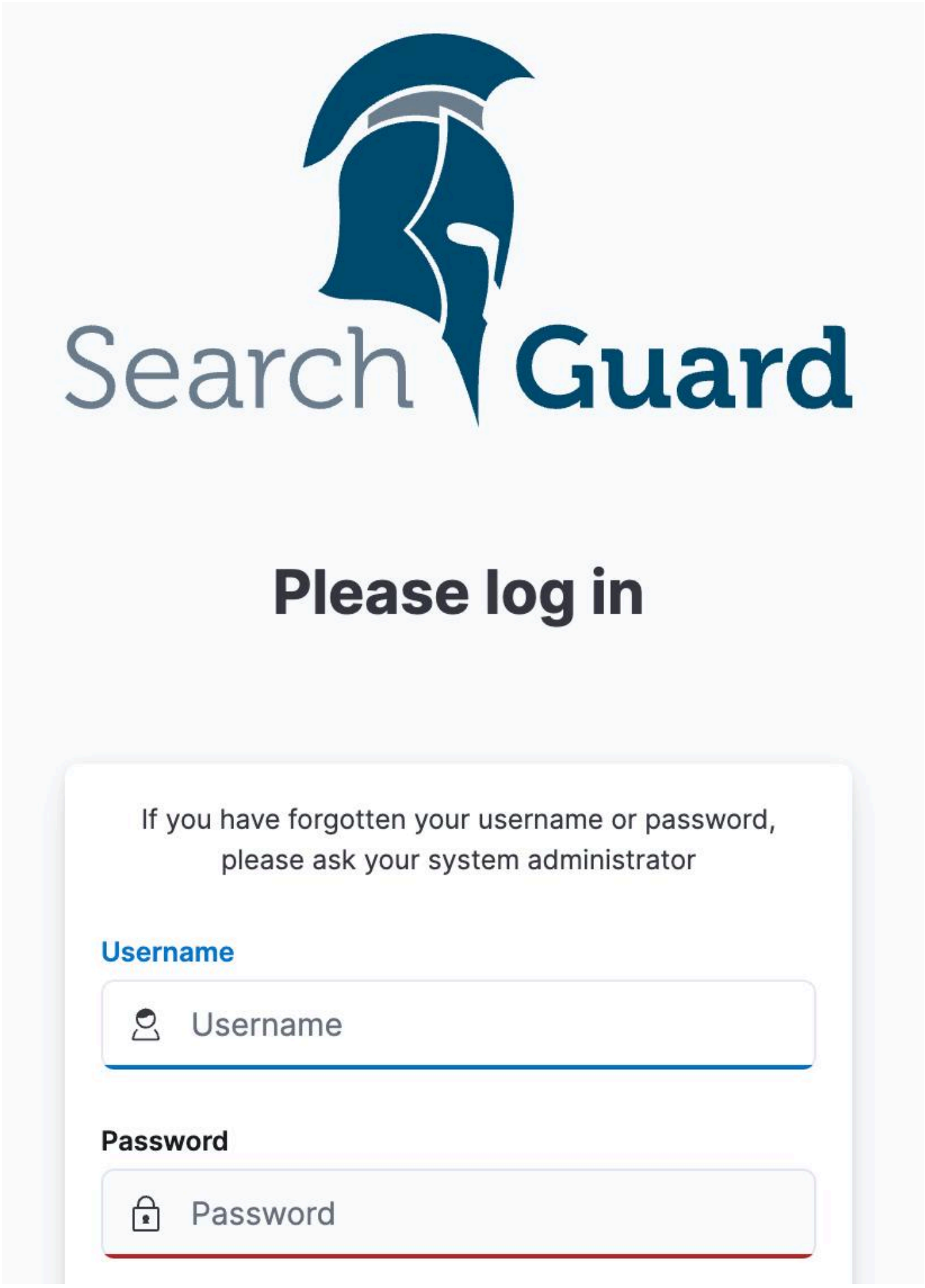
For this, we add our OIDC configuration to sg_frontend_authc.yml:

```
default:
  auth_domains:
  - type: basic
  - type: oidc
    enabled: true
    label: "OIDC Login"
    oidc.client_id: "<client id>"
    oidc.client_secret: "<client secret>"
    oidc.idp.openid_configuration_url: "https://searchguard.eu.auth0.com/.well-known/openid-
configuration"
    user_mapping.roles.from: "https://kibana.example.com/roles"
```

Again, we upload the changed configuration with sgctl:

```
./sgctl.sh update-config ./my-sg-config
```

When we visit Kibana again, the login screen now offers the option to also log in with OIDC in addition to username and password: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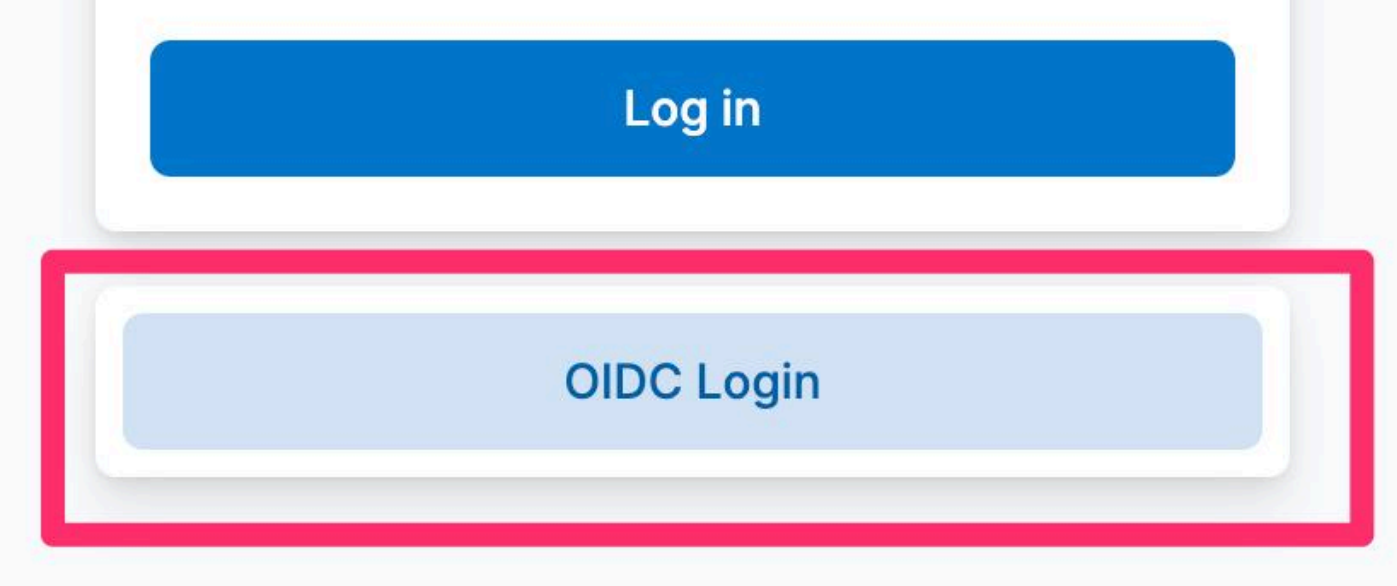

Of course, it does not stop here. You can add as many different authentication methods as required. You can add multiple IdPs, and mix ad match password-based authentication, OIDC, and SAML.

Video player configuration error

Error 153

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This article was published on the Search Guard blog: https://search-guard.com/blog/kibana-multiple-authentication-search-guard/

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