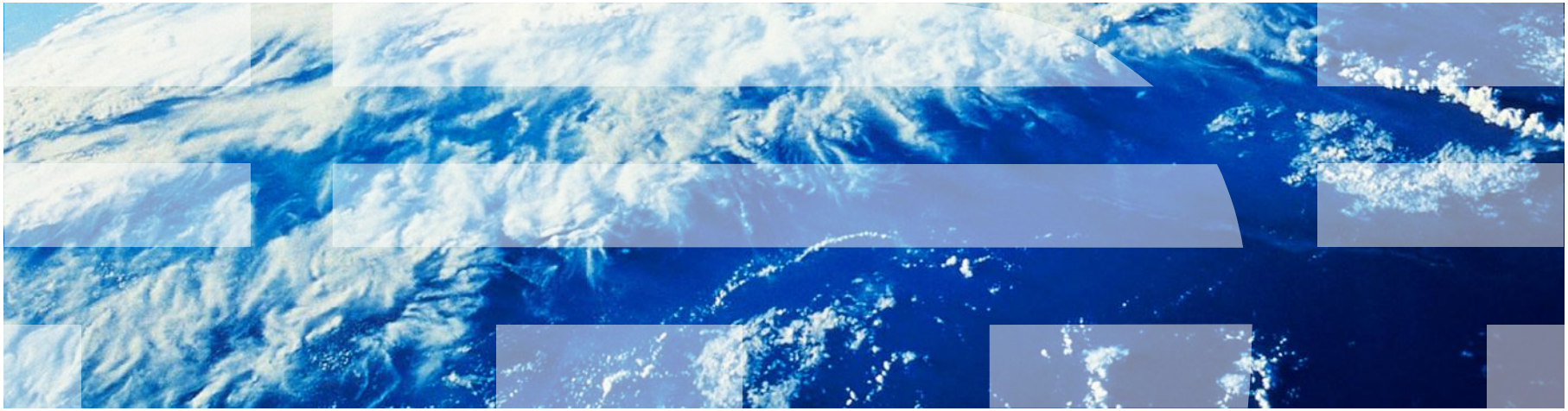
IBM Worklight Foundation V6.2.0 Getting Started

WebSphere LTPA-based authentication



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Using this module

- This module is intended for use with either IBM® Worklight® Consumer Edition or IBM Worklight Enterprise Edition.
  - The functionality that this module demonstrates is not available in the free IBM Worklight Developer Edition.
  - To use this module, you must deploy Worklight Server on WebSphere® Application Server full profile or Liberty Profile.

Agenda

- Introduction to WebSphere LTPA-based authentication
- Understanding the server-side authentication options
- Configuring Worklight Server for LTPA authentication
  - Configurations for WebSphere Application Server
  - Additional steps for Option 1
  - Optional steps for protecting the Worklight Console
- Creating client-side authentication components
- Examining the result
- Exercise

Introduction to WebSphere LTPA-based authentication

- WebSphere Application Server uses a secure token in a Lightweight Third-Party Authentication (LTPA) cookie to verify authenticated users. WebSphere Application Server also uses this mechanism to trust users across a secure WebSphere Application Server domain.
- When you run Worklight on WebSphere Application Server, you can use the **WebSphereFormBasedAuthenticator** and the **WebSphereLoginModule** to authenticate to the Worklight app by using an LTPA token.
- Two options are available to support WebSphere LTPA-based authentication for Worklight apps, referred to as **Option 1** and **Option 2**.

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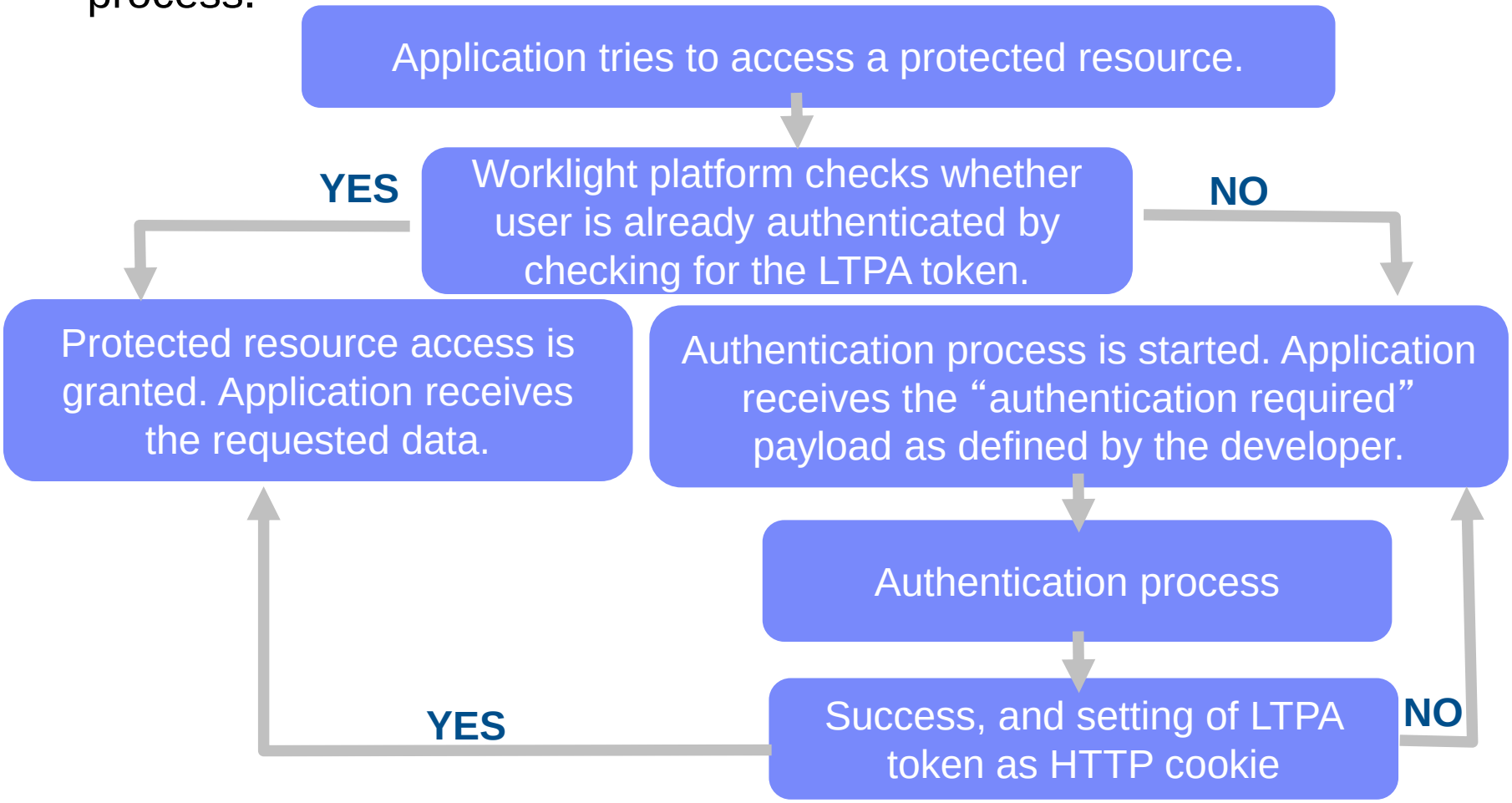
Understanding the server-side authentication options (1 of 7)

- This diagram illustrates the WebSphere LTPA-based authentication process.



Understanding server-side authentication options (2 of 7)

Option 1

- If the enterprise policy requires WAR files to be protected on secured instances of WebSphere Application Server, you can use Option 1 to handle this situation.
- Secure the web resources in the Worklight project WAR file by specifying the resource and the user role.
  - The **Authenticator** and **Login Module** that are defined as part of this configuration authenticate the user (based on the provided credentials) by using the underlying WebSphere Application Server security API. This mechanism means that if the user provides user name and password on initial login, this data is used to authenticate the user against the underlying registry on which the WebSphere Application Server configuration is based. Otherwise, if a valid LTPA token is provided on subsequent access, then this LTPA credential is used.

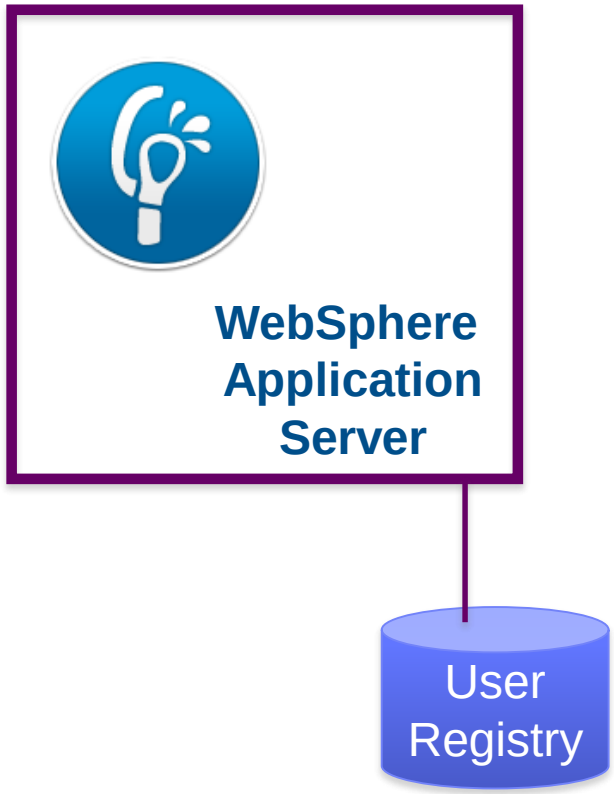
Understanding server-side authentication options (3 of 7)

Option 2

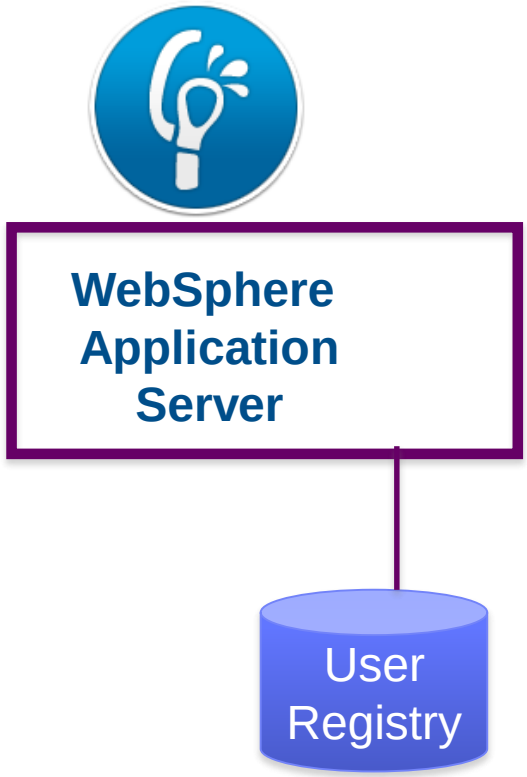
- Option 2 is for the Worklight security configuration to handle user authentication at the Worklight platform level, by using the security configuration of the underlying WebSphere Application Server instance.
  - The Worklight project that is deployed as a WAR file on WebSphere Application Server is not secured. The `web.xml` file of the WAR file does not reference any security constraints that protect the web resources.
  - The **Authenticator** and **Login Module** that are defined as part of this configuration authenticate the user (based on the provided credentials) by using the underlying WebSphere Application Server security API. This mechanism means that if the user provides user name and password on initial login, this data is used to authenticate the user against the registry on which the WebSphere Application Server configuration is based. Otherwise, if a valid LTPA token is provided on subsequent access, this LTPA credential is used.

Understanding server-side authentication options (4 of 7)

- Option 1: Authentication is enforced by WebSphere Application Server



- Option 2: Worklight Server enforces the authentication by relying on the WebSphere Application Server configuration



Understanding server-side authentication options (5 of 7)

- Option 1

Application

getSecretData

Authentication is required (by WebSphere Application Server)

submitAuthentication

You are authenticated now, LTPA set

getSecretData (passing in LTPA)

Here is your secret data

WebSphere Application Server

Worklight Server

WebSphere Application Server authenticates the user against the user registry. Based on successful authentication, Worklight login module sets the Worklight user.

Understanding server-side authentication options (6 of 7)

- Option 2

Application

Worklight Server

getSecretData

Authentication is required (by Worklight server)

submitAuthentication

You are authenticated now, LTPA set

getSecretData (passing in LTPA)

Here is your secret data

Worklight calls WebSphere Application Server security by using the Login Module to authenticate the user against the user registry of WebSphere Application Server.

Understanding server-side authentication options (7 of 7)

- Option 1 and Option 2 both present benefits and have different usages:

	Option 1	**Option 2**
Benefits	This option uses the traditional WebSphere Application Server authentication and trust model. The container enforces all security. Therefore, it can reuse existing investments in securing the Java™ Enterprise Edition (Java EE) container by using SSO products from other software vendors.	This option uses the traditional WebSphere Application Server authentication and trust model without the impact of modifying the Worklight project WAR file. The container enforces all security. Therefore, it can reuse existing investments in securing the Java™ Enterprise Edition (Java EE) container by SSO products from other software vendors. The layered authentication of device, application, application instance, and user works as intended. Flexibility is gained by configuring security settings that are specific to the Worklight runtime without being hindered by the underlying container security.
Usage	This option is suitable for scenarios where the devices can be trusted and access for rogue applications is restricted.	This option is suitable for scenarios where the devices or the apps on the devices cannot be trusted. The multistep authenticity checking that is built into the Worklight platform ensures denial of services to jail-broken devices, rogue applications, and unauthorized users.

- **Based on these benefits, if your business does not require Option 1, then Option 2 is best.**

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Configurations for WebSphere Application Server (1 of 4)

Step 1: Enable WebSphere Application Server security

- To compare the two options, you must first define the following settings on WebSphere Application Server:

  For option 1:

  - Enable administrative security
  - Enable application security

  For option 2:

  - Enable administrative security

Configurations for WebSphere Application Server (2 of 4)

Step 2: Configuring authenticationConfig.xml realm and authenticator

- Find the `authenticationConfig.xml` file in `{WAS_HOME}/profiles/{your profile}/installedApps/{your node}/{worklight EAR}/{worklight WAR}/WEB-INF/classes/conf` and uncomment the realm under the “For websphere” comment to obtain the following text:

```
<!-- For websphere -->
<realm name="WASLTPARealm" loginModule="WASLTPAModule">

  <className>com.worklight.core.auth.ext.WebSphereFormBasedAuthenticator</className>
  <parameter name="login-page" value="/login.html"/>
  <parameter name="error-page" value="/loginError.html"/>
</realm>
```

  - Optionally, you can include the parameters `cookie-domain`, `cookie-name`, and `httponly-cookie`. For more information, see the section about the LTPA authenticator in the product documentation.

- Note: The realm might already be uncommented

Configurations for WebSphere Application Server (3 of 4)
Step 2: Configuring authenticationConfig.xml realm and authenticator

- Uncomment the Login Module under the “For websphere” comment:

```
<!-- For websphere -->
<loginModule name="WASLTPAModule">
  <className>com.worklight.core.auth.ext.WebSphereLoginModule</className>
</loginModule>
```

- Note: The Login Module might already be uncommented.

Configurations for WebSphere Application Server (4 of 4)
Step 3: Configuring authenticationConfig.xml security tests

- Add security tests to the `authenticationConfig.xml` as appropriate:
  - Add webSecurityTest if you plan to develop for web environments
  - Add mobileSecurityTest if you plan to develop for mobile environments

```
<securityTests>
        <webSecurityTest name="wasWebSecurity">
              <testUser realm="WASLTPARealm"/>
        </webSecurityTest>

        <mobileSecurityTest name="WAS-securityTest">
              <testAppAuthenticity/>
              <testDeviceId provisioningType="none" />
              <testUser realm="WASLTPARealm"
         </mobileSecurityTest>
 </securityTests>
```

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Additional steps for Option 1 (1 of 3)

Step 1: Creating login.html

- Create a file that is named `login.html` and save it to the root of your WAR file: `{WAS_HOME}/profiles/{your profile}/installedApps/{your node}/{worklight EAR}/{worklight WAR}`
- Set its content as follows:

```
<html>
     <head></head>
     <body>
         <form action="j_security_check" method="post">
          Username: <input type="text" name="j_username" size="20"><br>
          Password: <input type="password" name="j_password" size="20"><br>
          <input type="submit" value="Login">
         </form>
     </body>
</html>
```

Additional steps for Option 1 (2 of 3)

Step 2: Creating loginError.html

- Create the `loginError.html` error page and place it in the root of your WAR file: `{WAS_HOME}/profiles/{your profile}/installedApps/{your node}/{worklight EAR}/{worklight WAR}`. The `loginError.html` page is used when login fails.
- Set its content as follows:

```
<html>
  <head></head>
   <body>
     Login invalid.
   </body>
</html>
```

Additional steps for Option 1 (3 of 3)

Step 3: Configuring web.xml – This step is optional for option 2, but mandatory for option 1.

- Locate the `web.xml` file: `{WAS_HOME}/profiles/{your profile}/installedApps/{your node}/{worklight EAR}/{worklight WAR}/WEB-INF/web.xml`
- Inside the root tag, add the tags as shown in this code sample. The easiest way is to copy-paste the sample.
- These tags pass to WebSphere Application Server the configuration that the WAR file expects.

```
<security-constraint id="SecurityConstraint_1">
    <web-resource-collection id="WebResourceCollection_1">
      <web-resource-name>Snoop Servlet</web-resource-name>
      <description>Protection area for Snoop Servlet.</description>
      <url-pattern>/*</url-pattern>
      <http-method>GET</http-method>
      <http-method>POST</http-method>
    </web-resource-collection>
    <auth-constraint id="AuthConstraint_1">
      <description>Snoop Servlet Security:+:All Authenticated users
    for Snoop Servlet.</description>
      <role-name>Role 3</role-name>
    </auth-constraint>
    <user-data-constraint id="UserDataConstraint_1">
      <transport-guarantee>NONE</transport-guarantee>
    </user-data-constraint>
</security-constraint>
<security-role id="SecurityRole_1">
    <description>All Authenticated Users Role.</description>
    <role-name>Role 3</role-name>
</security-role>
<login-config>
    <auth-method>FORM</auth-method>
    <form-login-config>
      <form-login-page>/login.html</form-login-page>
      <form-error-page>/loginError.html</form-error-page>
    </form-login-config>
</login-config>
```

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Optional: Protecting the Worklight Console (1 of 2)

- To protect the Worklight Console with WebSphere Application Server authentication credentials, modify the `authenticationConfig.xml` file as follows:
  - Uncomment the <staticResources> element to enable protection of static resources:

```
<!-- Uncomment the next element to protect the worklight console and
 the first section in securityTests below.  -->

<staticResources>

   <resource id="worklightConsole" securityTest="WorklightConsole">

        <urlPatterns>/console*</urlPatterns>

   </resource>

</staticResources>
```

Optional: Protecting the Worklight Console (2 of 2)

- Add a `<customSecurityTest>` element to your existing security tests:

```
<securityTests>
    <customSecurityTest name="WorklightConsole">
        <test realm="WASLTPARealm" isInternalUserID="true"/>
    </customSecurityTest>
</securityTests>
```

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Creating client-side authentication components

- Use an existing Worklight application from one of the Authentication modules.
- To implement security for an app, follow the same methods as for any other type of realm, and then configure the challenge handler to use your realm:

```
var sampleAppRealmChallengeHandler = WL.Client.createChallengeHandler("WASLTPARealm");
```

- In the `applicationDescriptor.xml` file, specify the security test that your app must use for the appropriate environments.

  For example:

```
<common securityTest="WAS-securityTest"/>
<android version="1.0" securityTest="WAS-securityTest">
    <pushSender key= "keyTest" senderId="senderIdTest"/>
</android>
```

- Deploy and test the application by using Option 2. The authentication requires a valid user name and password from the underlying user registry that the WebSphere Application Server is configured against. When the authentication is successful, the Worklight app is authenticated.

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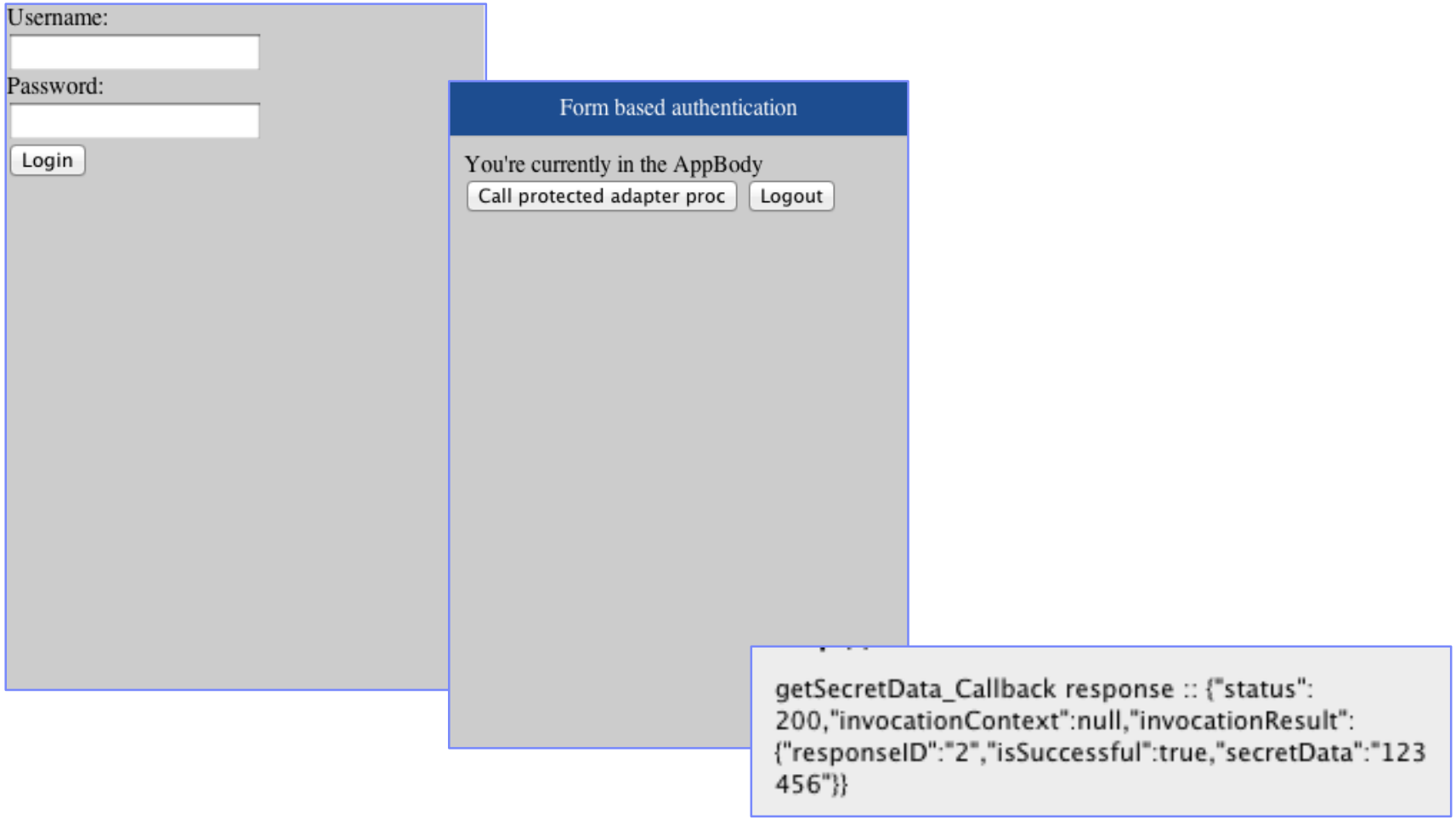
Examining the result



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Exercise

- Examine the Authentication sample that is used for Option 2.
- Implement Option 1 by securing the Worklight project WAR as shown in the steps for Option 1:
  - Update the `web.xml` file of the WAR file.
  - Repackage the WAR file and redeploy it to WebSphere Application Server.
- Expected results: The user experience is identical.

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