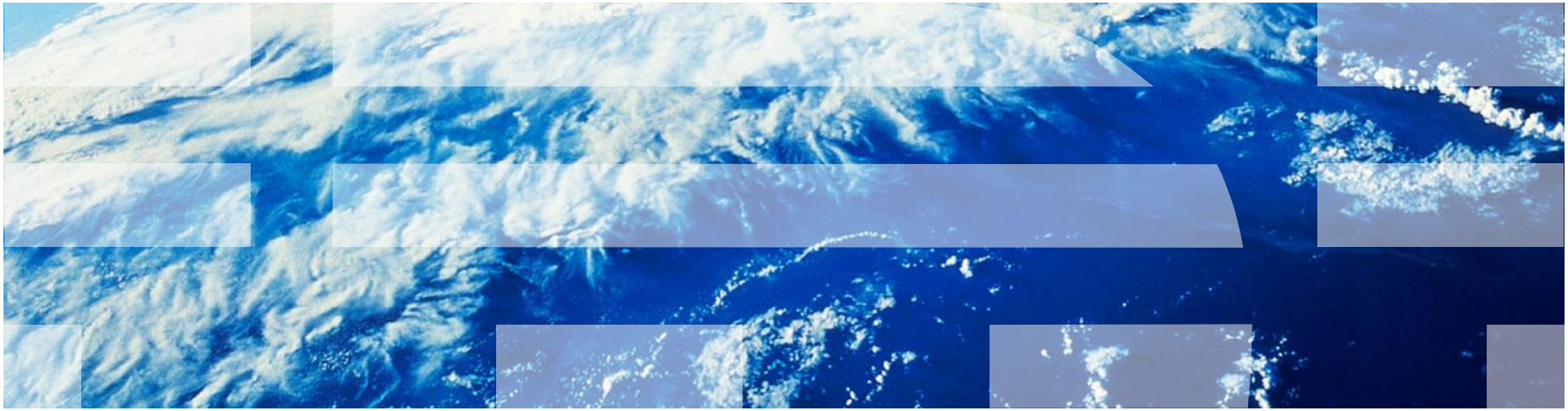
IBM Worklight Foundation V6.2.0
Getting Started

Form-based authentication in hybrid applications



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Agenda

- Introduction to form-based authentication
- Configuring the authenticationConfig.xml file
- Creating the server-side authentication components
- Creating the client-side authentication components
- Examining the result
- Exercise

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Introduction to form-based authentication

- In form-based authentication, the HTML code of a login form is returned in the server response when the application tries to access a protected resource.
- Although form-based authentication is best suited for desktop and web environments, where you actually display and use the returned login form, you can also use this authentication mode in mobile applications.
- To use form-based authentication, you must use a login module to validate the received credentials.
- In this module, you implement a simple form-based authentication mechanism that is based on a user name and a password.

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Configuring the authenticationConfig.xml file (1 of 2)

- The default **authenticationConfig.xml** file already contains a sample realm that is configured to use a form-based authenticator.

```
<realm loginModule="StrongDummy" name="SampleAppRealm">
    <className>com.worklight.core.auth.ext.FormBasedAuthenticator</className>
</realm>
```

- Notice the **StrongDummy** login module that is used for this realm.

```
<loginModule name="StrongDummy">
    <className>com.worklight.core.auth.ext.NonValidatingLoginModule</className>
</loginModule>
```

- **NonValidatingLoginModule** means that the user credentials are not validated. In other words: any combination of user name and password is valid.

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Configuring the authenticationConfig.xml file (2 of 2)

- Define a security test that uses the **SampleAppRealm.**
- You must use this security test to protect the adapter procedure, so make it a **<customSecurityTest>.**

```
<customSecurityTest name="DummyAdapter-securityTest">
    <test isInternalUserID="true" realm="SampleAppRealm"/>
</customSecurityTest>
```

- Remember the security test name, to use it in the subsequent steps.

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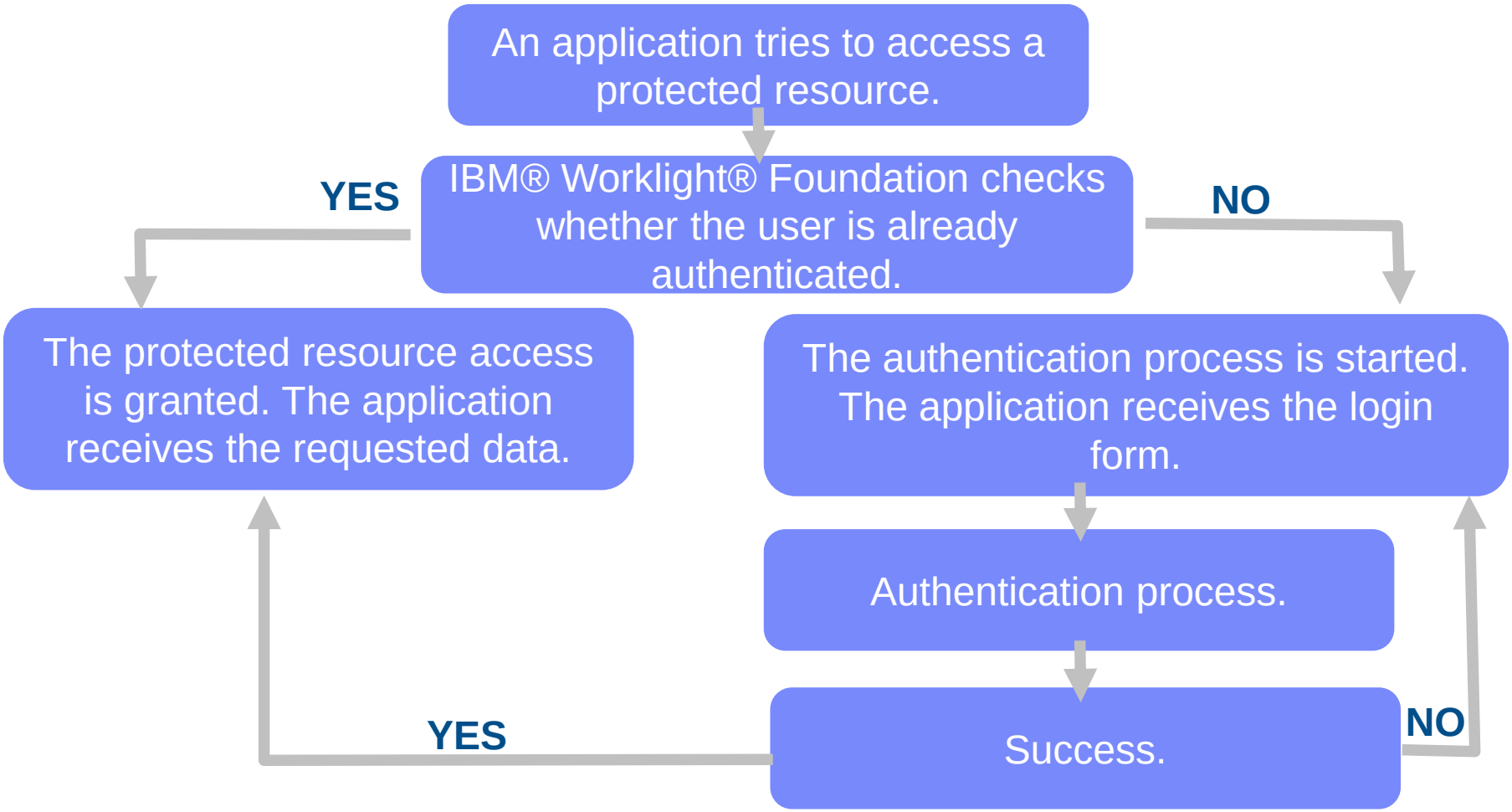
Creating the server-side authentication components (1 of 2)

- The following diagram illustrates the form-based authentication process.



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Creating the server-side authentication components (2 of 2)

- Create an adapter and name it **DummyAdapter**.
- Add a **getSecretData** procedure and protect it with the security test that you created in previous slides.

```
<procedure name="getSecretData" securityTest="DummyAdapter-securityTest"/>
```

- In this module, the **getSecretData** procedure returns some hardcoded value:

```
function getSecretData(){
    return {
        secretData: '123456'
    };
}
```


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Creating the client-side authentication components (1 of 14)

- Create a Worklight application.
- The application consists of two main elements:
  - The `<div id="AppBody">` element is used to display the application content.
  - The `<div id="AuthBody">` element is used for authentication form purposes.
- When authentication is required, the application hides `AppBody` and shows `AuthBody`.
- When authentication is complete, it does the opposite.

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Creating the client-side authentication components (2 of 14)

1. Start by creating a `<div id="AppBody">` element.
   - This element has a basic structure and functions.

```
<div id="AppBody">
    <input type="button" class="appButton" value="Call protected adapter proc"
        onclick="getSecretData()" />
    <input type="button" class="appButton" value="Logout"
        onclick="WL.Client.logout('SampleAppRealm', {onSuccess:  WL.Client.reloadApp});" />
</div>
```

   - The buttons are used to call the **getSecretData** procedure and to log-out.

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Creating the client-side authentication components (3 of 14)

2. Then create an `<div id="AuthBody">` element.

   This element contains contains the following subelements:

```
<div id="AuthBody" style="display: none">
    <div id="loginForm">
        Username:<br/>
        <input type="text" id="usernameInputField"  /><br />
        Password:<br/>
        <input type="password" id="passwordInputField" /><br/>
        <input type="button" id="loginButton" value="Login" />
        <input type="button" id="cancelButton" value="Cancel" />
    </div>
</div>
```

   - Username and a Password input fields
   - Login and a Cancel buttons

- The `AuthBody` element is styled as **display:none** because it must not be displayed before authentication is requested by the server.

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Creating the client-side authentication components (4 of 14)

3. Finally, create a challenge handler (1 of 3).

Use the following API to create this handler and implement its functionality.

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

sampleAppRealmChallengeHandler.isCustomResponse = function(response) {
    return false;
};

sampleAppRealmChallengeHandler.handleChallenge = function(response) {
};
```

Use the `WL.Client.createChallengeHandler()` method to create a challenge handler object. The realm name is a mandatory parameter.

Create a challenge handler to define a customized authentication flow. In your challenge handler, do not add code that modifies the user interface when this modification is not related to the authentication flow.

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Creating the client-side authentication components (5 of 14)

- Create a challenge handler (2 of 3).
  - Use the following API to create this handler and implement its functionality.

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

sampleAppRealmChallengeHandler.isCustomResponse = function(response) {
    return false;
};

sampleAppRealmChallengeHandler.handleChallenge = function(response) {
};
```

The `isCustomResponse` function of the challenge handler is invoked each time that a response is received from the server. It is used to detect whether the response contains data that is related to this challenge handler. It must return either `true` or `false`.

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Creating the client-side authentication components (6 of 14)

- Create a challenge handler (3 of 3).
  - Use the following API to create this handler and implement its functionality.

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

sampleAppRealmChallengeHandler.isCustomResponse = function(response) {
    return false;
};

sampleAppRealmChallengeHandler.handleChallenge = function(response) {
};
```

If `isCustomResponse` returns **true**, the framework calls the `handleChallenge()` function. This function is used to perform required actions, such as hide application screen and show login screen.

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Creating the client-side authentication components (7 of 14)

- In addition to the methods that the developer must implement, the challenge handler contains functionality that the developer might want to use:
  - `submitLoginForm()` sends the collected credentials to a specific URL. The developer can also specify request parameters, headers, and callback.
  - `submitSuccess()` notifies the Worklight framework that the authentication successfully finished. The Worklight framework then automatically issues the original request that triggered the authentication.
  - `submitFailure()` notifies the Worklight framework that the authentication process completed with failure. The Worklight framework then disposes of the original request that triggered the authentication.

  **** Note that each of these functions must be attached to its object. For example:***
  `SampleAppRealmChallengeHandler.submitSuccess()`
- You use these functions during the implementation of the challenge handler in the next slides.

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Creating the client-side authentication components (8 of 14)

- Create a challenge handler.

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

sampleAppRealmChallengeHandler.isCustomResponse = function(response) {
    if (!response || response.responseText === null) {
        return false;
    }
    var indicatorIdx = response.responseText.search('j_security_check');

    if (indicatorIdx >= 0){
        return true;
    }
    return false;
};

sampleAppRealmChallengeHandler.handleChallenge
    $('#AppBody').hide();
    $('#AuthBody').show();
    $('#passwordInputField').val('');
};
```

The default login form that is returned from the Worklight server contains the `j_security_check` string. If the challenge handler detects it in the response, return **true**.

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Creating the client-side authentication components (9 of 14)

- Create a challenge handler.

```
var sampleAppRealmChallengeHandler = WL.Clien

sampleAppRealmChallengeHandler.isCustomRespon
    if (!response || response.responseText ===
        return false;
    }
    var indicatorIdx = response.responseText.

    if (indicatorIdx >= 0){
        return true;
    }
    return false;
};

sampleAppRealmChallengeHandler.handleChallenge = function(response) {
    $('#AppBody').hide();
    $('#AuthBody').show();
    $('#passwordInputField').val('');
};
```

After the client application detects that the server sent a login form, which means that the server is requesting authentication, the application hides the `AppBody`, shows the `AuthBody`, and cleans up the **passwordInputField**.

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Creating the client-side authentication components (10 of 14)

- Create a challenge handler.

```
$('#loginButton').bind('click', function () {
    var reqURL = '/j_security_check';
    var options = {};
    options.parameters = {
        j_username : $('#usernameInputField').val(),
        j_password : $('#passwordInputField').val()
    };
    options.headers = {};
    sampleAppRealmChallengeHandler.submitLoginForm(reqURL, options,
            sampleAppRealmChallengeHandler.submitLoginFormCallback);
});

$('#cancelButton').bind('click', function
    sampleAppRealmChallengeHandler.submitF
    $('#AppBody').show();
    $('#AuthBody').hide();
});
```

Clicking the **login** button triggers a function that collects the user name and password from the HTML input fields and submits them to the server.
It is possible to set request headers here, and specify callback.

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Creating the client-side authentication components (11 of 14)

- Create a challenge handler.

```
$('#loginButton').bind('click', function () {
    var reqURL = '/j_security_check';
    var options = {};
    options.parameters = {
        j_username : $('#usernameInputField').val(),
        j_password : $('#passwordInputField').val()
    };
    options.headers = {};
    sampleAppRealmChallengeHandler.submitLoginForm(reqURL, options,
            sampleAppRealmChallengeHandler.submitLoginFormCallback);
});

$('#cancelButton').bind('click', function
    sampleAppRealmChallengeHandler.submitF
    $('#AppBody').show();
    $('#AuthBody').hide();
});
```

The form-based authenticator uses a hardcoded `j_security_check` URL component. You cannot have more than one instance of it.

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Creating the client-side authentication components (12 of 14)

- Create a challenge handler.

```
$('#loginButton').bind('click', function
    var reqURL = '/j_security_check';
    var options = {};
    options.parameters = {
        j_username : $('#usernameInputFie
        j_password : $('#passwordInputFie
    };
    options.headers = {};
    sampleAppRealmChallengeHandler.submitL
            sampleAppRealmChallengeHandler.s
});

$('#cancelButton').bind('click', function () {
    sampleAppRealmChallengeHandler.submitFailure();
    $('#AppBody').show();
    $('#AuthBody').hide();
});
```

Clicking the **cancel** button hides the `authBody`, shows the `appBody`, and notifies the Worklight framework that authentication failed.

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Creating the client-side authentication components (13 of 14)

- Create a challenge handler.

```
sampleAppRealmChallengeHandler.submitLoginFormCallback = function(response) {
    var isLoginFormResponse = sampleAppRealmChallengeHandler.isCustomResponse(response);
    if (isLoginFormResponse){
        sampleAppRealmChallengeHandler.handleChallenge(response);
    } else {
        $('#AppBody').show();
        $('#AuthBody').hide();
        sampleAppRealmChallengeHandler.submitSuccess();
    }
};
```

The callback function checks the response for the containing server challenge again. If a challenge is found, the `handleChallenge()` function is called again.

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Creating the client-side authentication components (14 of 14)

- Create a challenge handler.

```
sampleAppRealmChallengeHandler.submitLoginFormCallback = function(response) {
    var isLoginFormResponse = sampleAppRealmChallengeHandler.isCustomResponse(response);
    if (isLoginFormResponse){
        sampleAppRealmChallengeHandler.handleChallenge(response);
    } else {
        $('#AppBody').show();
        $('#AuthBody').hide();
        sampleAppRealmChallengeHandler.submitSuccess();
    }
};
```

No challenge present in the server response means that the authentication successfully completed. In this case, `AppBody` is shown, `AuthBody` is hidden, and the Worklight framework is notified about the authentication success.

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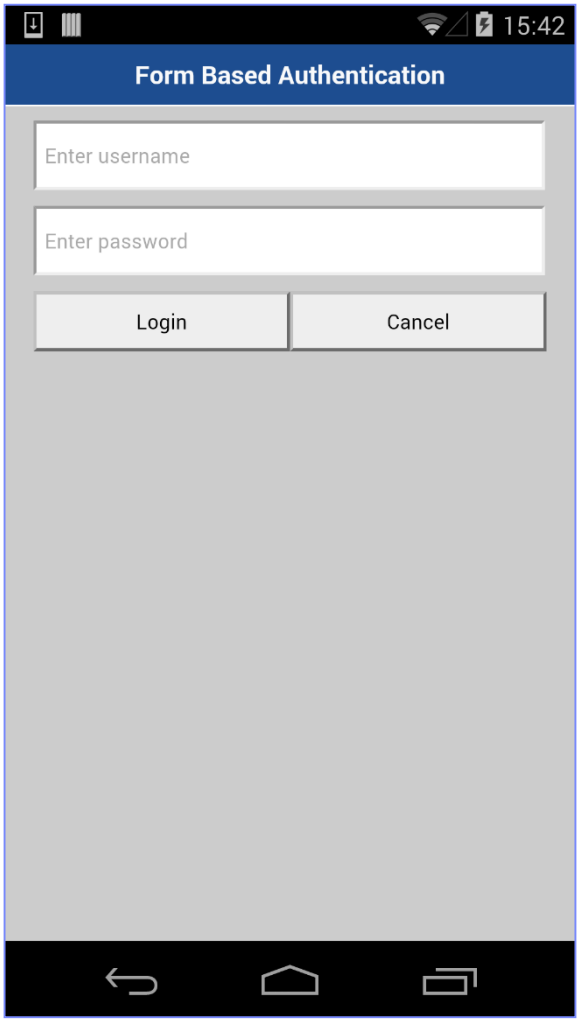
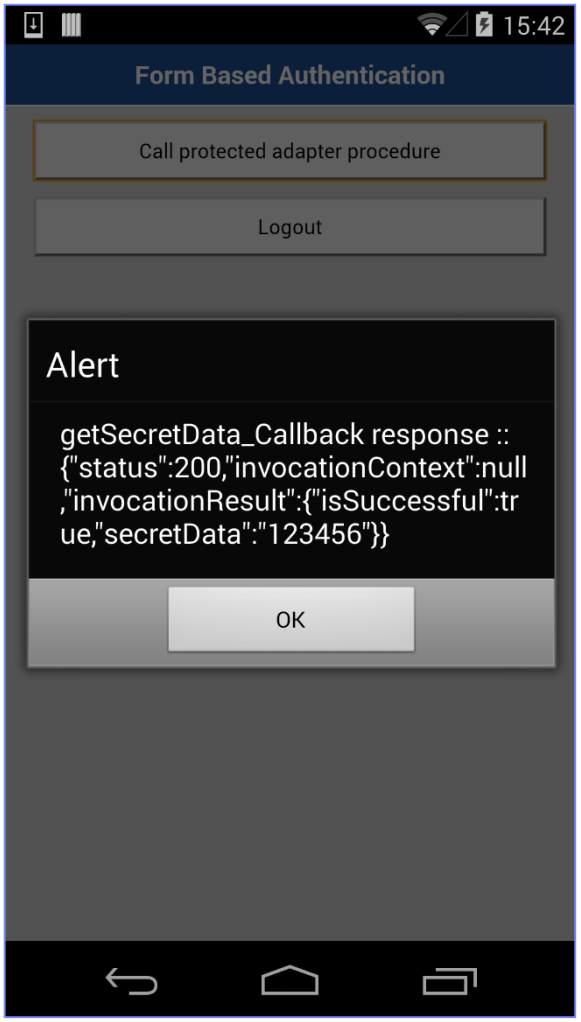
Examining the result





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Exercise

- Implement the form-based authentication that is described in this module.
- You can find the sample for this training module in the Getting Started page of the documentation website at http://www.ibm.com/mobile-docs

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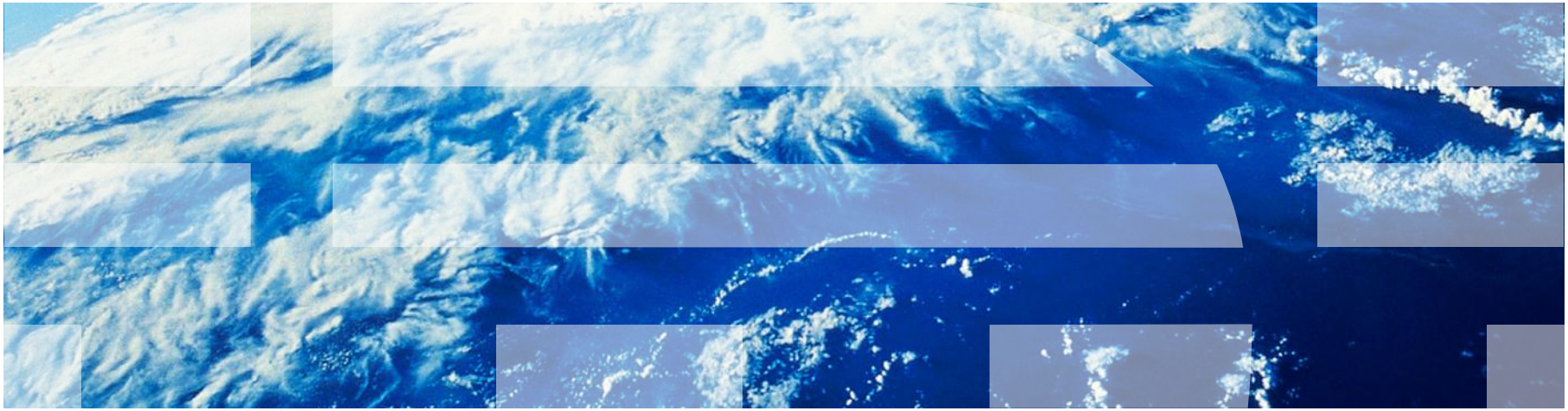

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