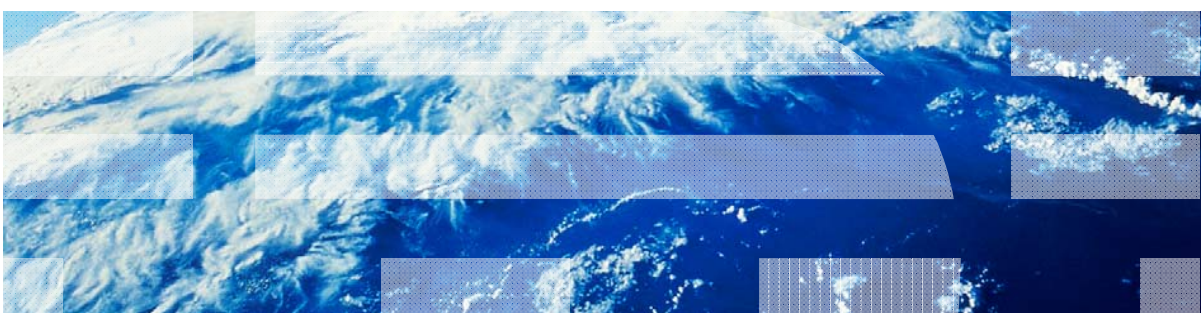
IBM Worklight V5.0.6
Getting Started

Form-based authentication



15 March 2013

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Agenda

- Form-based authentication introduction
- Configuring the authenticationConfig.xml
- Creating the server-side authentication components
- Creating the client-side authentication components
- Examining the result
- Exercise

Form-based authentication introduction

- In a 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.
- Though most fitted for desktop and web environments, where you actually display and use the returned login form, you can also use the form-based authentication in mobile applications.
- To use a 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

- 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 alright.

Configuring the authenticationConfig.xml

- 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. You will be using it in subsequent slides.

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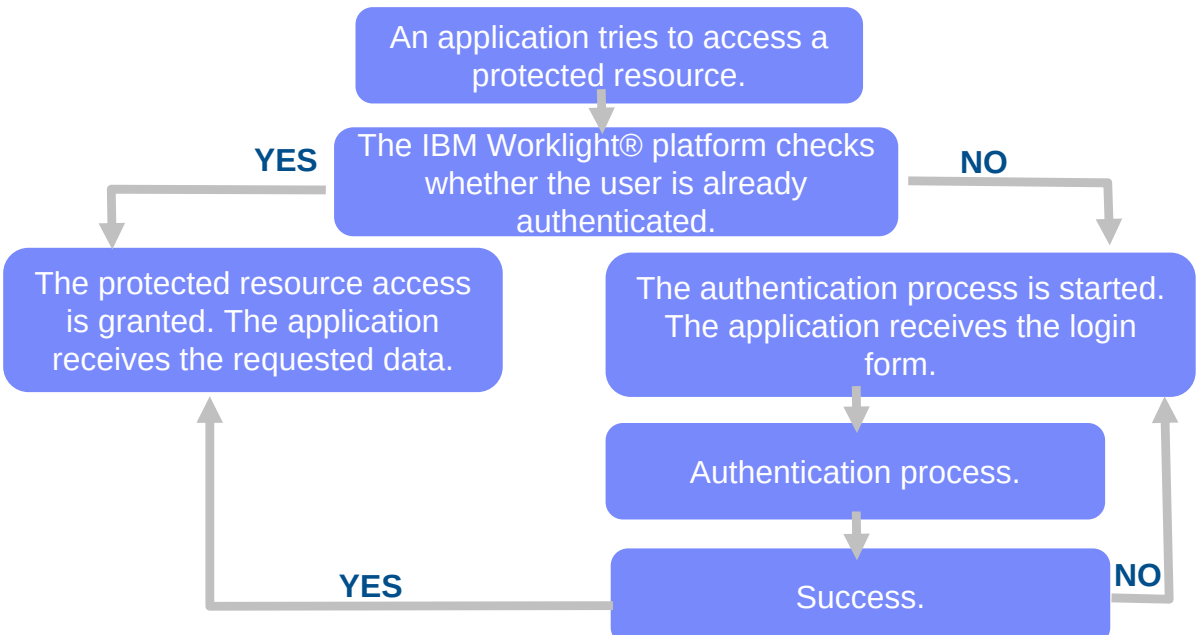
Creating the server-side authentication components

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



Creating the server-side authentication components

- 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

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

Creating the client-side authentication components

- Start by creating an AppBody.
- It has a basic structure and functions.

```
<div id="AppBody">
    <div class="header">
        <h1>Form based authentication</h1>
    </div>

    <div class="wrapper">
        You're currently in the AppBody<br />
        <input type="button" value="Call protected adapter proc" onclick="getSecretData()" />
        <input type="button" value="Logout"
            onclick="WL.Client.logout('SampleAppRealm', {onSuccess:  WL.Client.reloadApp});" />
    </div>

</div>
```

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

Creating the client-side authentication components

- The AuthBody contains the following elements:

```
<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>
```

  - A Username and a Password input fields.
  - A Login and a Cancel buttons.
- The AuthBody is styled as **display:none**, because it must not be displayed before the authentication is requested by server.

Creating the client-side authentication components

- Finally, create a challenge handler.
- Use the following API to create this handler and implement its functionality.

```
var myChallengeHandler = WL.Client.createChallengeHandler("realm-name");

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

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

Use the **WL.Client.createChallengeHandler()** to create a challenge handler object. A realm name must be supplied as a parameter.

Creating the client-side authentication components

- Finally, create a challenge handler.
- Use the following API to create this handler and implement its functionality.

```
var myChallengeHandler = WL.Client.createChallengeHandler("realm-name");

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

myChallengeHandler.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 response contains data that are related to this challenge handler. It must return **true** or **false.**

Creating the client-side authentication components

- Finally, create a challenge handler.
- Use the following API to create this handler and implement its functionality.

```
var myChallengeHandler = WL.Client.createChallengeHandler("realm-name");

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

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

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

Creating the client-side authentication components

- In addition to the methods that the developer must implement, the challenge handler contains functionality that the developer might want to use:
  - The **myChallengeHandler.submitLoginForm()** is used to send collected credentials to a specific URL. Developer can also specify request parameters, headers, and callback.
  - The **myChallengeHandler.submitSuccess()** notifies the Worklight framework that the authentication successfully finished. The Worklight framework then automatically issues the original request that triggered the authentication.
  - The **myChallengeHandler.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.
- You will use these functions during the implementation of the challenge handler in the next slides.

Creating the client-side authentication components

- 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**.

Creating the client-side authentication components

- 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**.

Creating the client-side authentication components

- 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 a 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.

Creating the client-side authentication components

- 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 hardcoded j_security_check URL component. You cannot have more than one instance of it.

Creating the client-side authentication components

- 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 a cancel button hides the authBody, shows the appBody, and notifies the Worklight framework that authentication failed.

Creating the client-side authentication components

- 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 invoked again.

Creating the client-side authentication components

- 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 IBM Worklight framework is notified about the authentication success.

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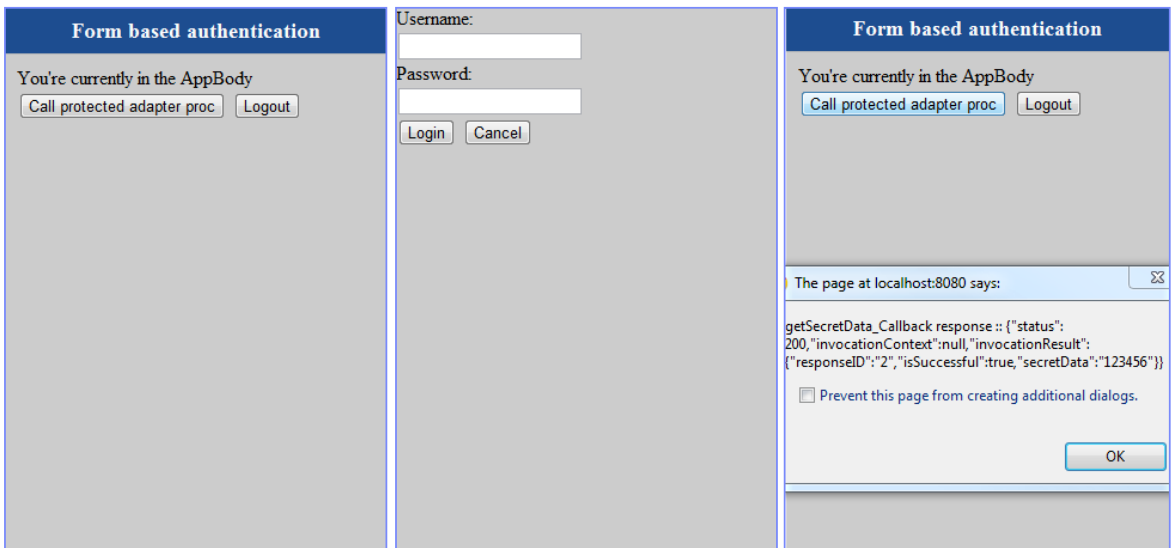
Examining the result



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Exercise

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

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