NTLM authentication

Overview

The NTLM protocol is a challenge-response mechanism for authentication users in Windows operating systems.
This tutorial explains how to use a MobileFirst adapter when connecting to a back end or resource that is protected by NTLM protocol for user authentication.

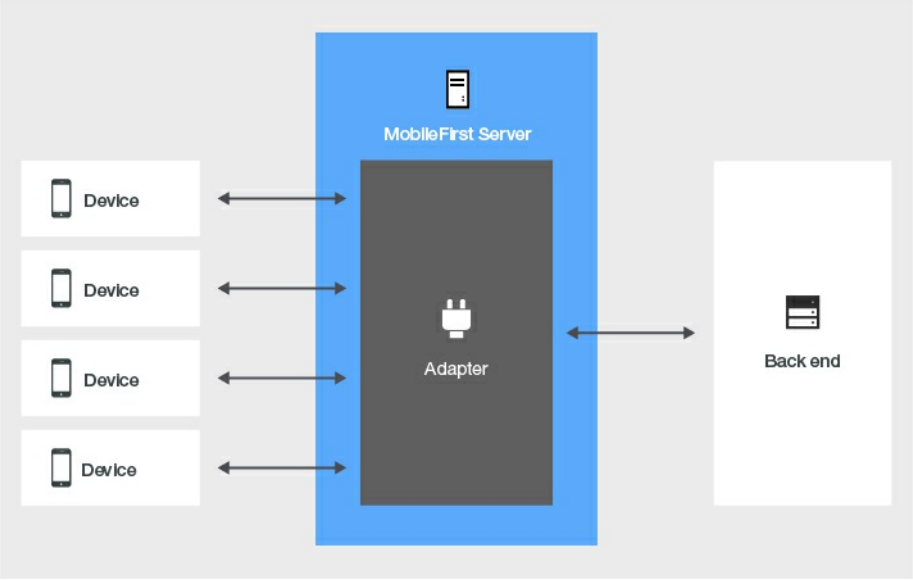
Topics:

- Back-end connection settings (`connectAs="endUser/server"`)
- Using NTLM authentication with `ServerIdentity`
- Using NTLM authentication with `UserIdentity`

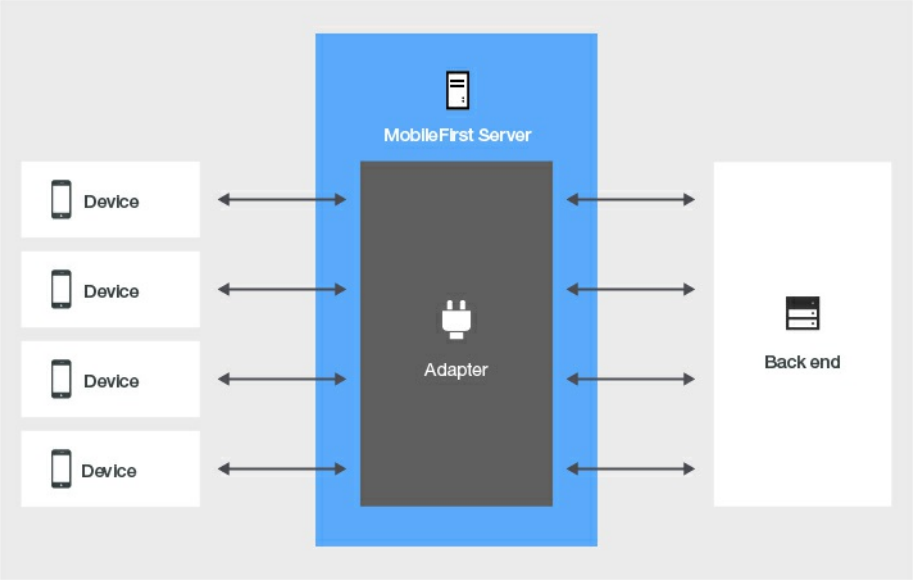
Back-end connection settings (`connectAs="endUser/server"`)

For MobileFirst Server to handle sessions when connecting to a back-end system, you can use either of the following 2 approaches:

- **`connectAS="server"`**:
  All sessions use the same connection context to the back end.
  This is the MobileFirst Server default behavior.



- **`connectAS="endUser"`**:
  Each session is authenticated separately and has a unique connection context against the back end.



For a procedure to be connected as "end user", you must declare it with a `connectAs="endUser"` attribute in the adapter XML file:

```
<procedure name="MyProcedure" connectAs="endUser"/>
```

> For more information about the `connectAs` attribute, read the blog post about Configuring HTTP adapters for stateless/stateful back-end connectivity and user identity propagation (https://www.ibm.com/developerworks/community/blogs/worklight/entry/configuring_http_adapters_for_stateless_stateful_backend_connectivity_and_user_identity?lang=en).

Using NTLM authentication with `ServerIdentity`

When you use a procedure to connect to a back-end server that uses NTLM protocol without specifying the `connectAs` attribute, use the `<serveridentity>` element of the adapter XML file as child element of the `<authentication>` element. Also add the `<ntlm workstation>` child element, so that MobileFirst Server knows which authentication method to use when connecting to the back end.

Make sure to pass the server and user names to the back-end server in the following pattern: `*server-name/user-name*`.

```
<connectivity>
   <connectionPolicy xsi:type="http:HTTPConnectionPolicyType">
      <protocol>http</protocol>
      <domain>your-domain-here</domain>
      <port>80</port>
      <connectionTimeoutInMilliseconds>30000</connectionTimeoutInMilliseconds>
      <socketTimeoutInMilliseconds>30000</socketTimeoutInMilliseconds>
      <authentication>
         <ntlm workstation="ServerName"/>
         <serverIdentity>
            <username>your-server-name/your-username-here</username>
            <password>your-password-here</password>
         </serverIdentity>
      </authentication>
      <maxConcurrentConnectionsPerNode>50</maxConcurrentConnectionsPerNode
>
   </connectionPolicy>
</connectivity>
```

> **Note:** When the NTLM protocol is used, the user name is always specified in the *{server-name/user-name}* format.

Using NTLM authentication with `UserIdentity`

Configure MobileFirst Server authentication

1. Create a security test to protect the procedure:

   ```
   <customSecurityTest name="NTLMSecurityTest">
      <test isInternalUserID="true" realm="NTLMAuthRealm"/
   >
   </customSecurityTest>
   ```

2. Use `BasicAuthenticator`, `AdapterBasedAuthenticator`, or any other authenticator that handles `userIdentity`, as the class for the realm used by the security test:

   ```
   <realm name="NTLMAuthRealm" loginModule="AuthLoginModule">
      <className>com.worklight.integration.auth.AdapterAuthenticator</className
   >
      <parameter name="login-function" value="MyAdapter.onAuthRequired"/>
      <parameter name="logout-function" value="MyAdapter.onLogout"/>
   </realm>
   ```

3. Add some login module to create and store user identities to be used by this realm:

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

4. Add the `<authentication>` element and its `<ntlm workstation>` child element to the adapter XML file, so that MobileFirst Server knows which authentication method to use when connecting to the back end:

```
<connectivity>
    <connectionPolicy xsi:type="http:HTTPConnectionPolicyType">
        <protocol>http</protocol>
        <domain>Put.Your.Domain.Here</domain>
        <port>80</port>
        <connectionTimeoutInMilliseconds>30000</connectionTimeoutInMilliseconds>
        <socketTimeoutInMilliseconds>30000</socketTimeoutInMilliseconds>
        <authentication>
            <ntlm workstation="wl-ntlm"/>
        </authentication>
        <maxConcurrentConnectionsPerNode>50</maxConcurrentConnectionsPerNode
>
    </connectionPolicy>
</connectivity>
```

5. Assign this security test to the procedure that is used to connect to the back end protected by NTLM protocol, and add `connectAs="endUser"` to the procedure declaration in the adapter XML file:

```
<procedure name="getNTLMData" securityTest="NTLMSecurityTest" connectAs="endUser"/>
```

Adapter JavaScript code

Create a `UserIdentity` that contains a user identifier and credentials properties. Format the `userId` as *`servername/username`*:

```
function submitAuthentication(username, password){
  var userIdentity = {
    userId: "MyServerName\/"+ username,
    credentials: password
  };
  WL.Server.setActiveUser("NTLMAuthRealm", null);
  WL.Server.setActiveUser("NTLMAuthRealm", userIdentity)
;
  ...
}
```

Create an http request to the NTLM protected back end:

```
function getSecretData(){
  var input = {
    method : 'get',
    returnedContentType : 'html',
    path : "index.html"
  };
  return WL.Server.invokeHttp(input)
;
}
```