

# 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) ([https://www.ibm.com/developerworks/community/blogs/worklight/entry/configuring\\_http\\_adapters\\_for\\_stateless\\_stateful\\_backend\\_connectivity\\_and\\_user\\_identity\\_lang=en](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>` 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>` 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)
;
}
```