



Coding Examples for Browserless HTTP Request with Token Based Authentication

The following are example code snippets for use with the MSRS browserless HTTP Request with Token Based Authentication to download MSRS reports.

To access our Train(sandbox) environment, the URLs in each example need to be replaced with the Train URLs below.

Train(sandbox):

Authentication URL: <https://ssotrain.pjm.com/access/authenticate>

MSRS URL: <https://msrsapptrain.pjm.com>

Authentication header cookie: pjmauthtrain =

Production:

Authentication URL: <https://sso.pjm.com/access/authenticate>

MSRS URL: <https://msrsapp.pjm.com>

Authentication header cookie: pjmauth =

To see the list of available reports to download, authentication must first be made and then a request can be sent to the following URL:

The following URL will generate a list of available reports in XML format.

<https://msrsapp.pjm.com/msrs/rest/secure/download/reportNames>

curl

It is standard as part of both linux and Windows 10. It can also be downloaded at: <https://curl.haxx.se/download.html>.

First authenticate with credentials to receive token:

```
curl --request POST --header "X-OpenAM-Username: username" --header "X-OpenAM-password: password" --header "Content-Type:application/json" --data "{}" https://sso.pjm.com/access/authenticate
```

Response returns token:



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```
{"tokenId":"9-  
rN8J5nYazraGSKA6DRY0B80C4.*AAJTSQACMDIAA1NLABxQZm1tdGRUK3R0RUFWR01Ic3dDMTVtWHAzTjg9AAJTMQACMDE.*", "successUrl":"/access/co  
nsole", "realm":"/"}
```

Use received Token to request MSRS download:

```
curl --request GET --header "Cookie: pjmauth=9-  
rN8J5nYazraGSKA6DRY0B80C4.*AAJTSQACMDIAA1NLABxQZm1tdGRUK3R0RUFWR01Ic3dDMTVtWHAzTjg9AAJTMQACMDE.*" --header "Content-  
Type:text/csv" "https://msrsapp.pjm.com/msrs/rest/secure/download/reports?version=L&shortName=weeklybillingstatement-  
csvandxml&stop=01-07-2020&format=C&start=01-01-2020"
```

Use received Token to request MSRS download (SUMA users to access other account):

```
curl --request GET --header "Cookie: pjmauth=9-  
rN8J5nYazraGSKA6DRY0B80C4.*AAJTSQACMDIAA1NLABxQZm1tdGRUK3R0RUFWR01Ic3dDMTVtWHAzTjg9AAJTMQACMDE.*" --header "Content-  
Type:text/csv" -header "Suma-Account: ABCD"  
"https://msrsapp.pjm.com/msrs/rest/secure/download/reports?version=L&shortName=weeklybillingstatement-csvandxml&stop=01-  
07-2020&format=C&start=01-01-2020"
```

Use received Token to request MSRS download (SUMA users to request for all accounts):

```
curl --request GET --header "Cookie: pjmauth=9-  
rN8J5nYazraGSKA6DRY0B80C4.*AAJTSQACMDIAA1NLABxQZm1tdGRUK3R0RUFWR01Ic3dDMTVtWHAzTjg9AAJTMQACMDE.*" --header "Content-  
Type:text/csv" "https://msrsapp.pjm.com/msrs/rest/secure/download/reports?version=L&shortName=weeklybillingstatement-  
csvandxml&stop=01-07-2020&format=C&start=01-01-2020&requestAll=true"
```



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Java (Java version 7+ and CLI is required)

```
/**
 * Example call to download a file from PJM into a FileOutputStream to save
 * the results to disk.
 */
public static void downloadToFile() {
    try {
        final PjmRemoteCommand command = new PjmRemoteCommand();
        // first set up URL and credentials
        command.setServiceUrl("https://msrsapp.pjm.com/msrs/");
        command.setUsername("pjmuser");
        command.setPassword("Pjm4567!");

        // optional header parameter for SUMA users to access other account
        // command.getHeaderParams().put("Suma-Account", "ABCD");

        // the URL action you want to execute
        command.setAction("rest/secure/download/reports");

        // any query parameters required by the download
        command.getQueryParams().put("shortName", Arrays.asList("weeklybillingstatement-csvandxml"));
        command.getQueryParams().put("start", Arrays.asList("01-01-2020"));
        command.getQueryParams().put("stop", Arrays.asList("01-07-2020"));
    }
}
```



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```
command.getQueryParams().put("format", Arrays.asList("C"));
command.getQueryParams().put("version", Arrays.asList("L"));

// optional query parameter for SUMA users to request for all accounts
// command.getQueryParams().put("requestAll", Arrays.asList("true"));

// create an output stream to capture the output result
final File file = new File("weeklybillingstatement-csvandxml.csv");
final FileOutputStream fos = new FileOutputStream(file);

// buffer the stream for performance
final BufferedOutputStream bos = new BufferedOutputStream(fos);
command.setOutputStream(bos);

// execute the command and inspect the results
final PjmResult result = PjmClient.execute(command);

if (result.getResultCode() == PjmResult.CLI_SUCCESS) {
    System.out.println("Download succeeded for file: " + result.getFileName());
} else {
    System.out.println("Download failed for file: " + result.getFileName());
}
} catch (final Exception ex) {
    ex.printStackTrace();
}
}
```



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.Net (Java version 7+ and CLI is required)

```
static void Main(string[] args)
{
    // Set up URL and credentials
    string serviceUrl = "https://msrsapp.pjm.com/msrs/";
    string userName = "pjmuser";
    string password = "Pjm4567!";

    // the URL action to excute
    string action = "rest/secure/download/reports";

    // Set up the report parameters
    string shortName = "weeklybillingstatement-csvandxml";
    string start = "01-01-2020";
    string stop = "01-07-2020";
    string format = "C";
    string version = "L";

    //Create process
    System.Diagnostics.Process pProcess = new System.Diagnostics.Process();

    //strCommand is path and file name of command to run
    pProcess.StartInfo.FileName = "java";
```



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```
//Optional
pProcess.StartInfo.WorkingDirectory = "C:/Personal/tools/pjm-cli/";

//strCommandParameters are parameters to pass to program
string argParams = "-Xms64m -Xmx256m -jar pjm-cli.jar -u " + userName + " -p " + password
    + " -d ./download/ -z 180000 -s " + serviceUrl + " -a " + action + " -q shortName="
    + shortName + " -q start=" + start + " -q stop=" + stop + " -q version=" + version
    + " -q format=" + format;

//Optional param for SUMA users to request for all accounts
//argParams = argParams + " -q requestAll=true";

//Optional param for SUMA users to access other account
//argParams = argParams + " -h Suma-Account=ABCD";

pProcess.StartInfo.Arguments = argParams;

// hide window
pProcess.StartInfo.CreateNoWindow = true;
pProcess.StartInfo.UseShellExecute = false;

//Set output of program to be written to process output stream
pProcess.StartInfo.RedirectStandardOutput = true;

//Start the process
pProcess.Start();

//Get program output
string strOutput = pProcess.StandardOutput.ReadToEnd();

//Wait for process to finish
pProcess.WaitForExit();

Console.WriteLine(strOutput);
Console.ReadLine();
```



Coding Examples for Browserless HTTP Request with Token Based Authentication

```
}
```

VBA

For sending requests using Basic Authentication:

```
Dim Request As Object
```

```
Dim url As String
```

```
Dim Filename As String
```

```
Set Request = CreateObject("WinHttp.WinHttpRequest.5.1")
```

```
url = "https://sso.pjm.com/access/authenticate"
```

```
Request.Open "POST", url, False
```

```
Request.SetRequestHeader "X-OpenAM-Username", username
```

```
Request.SetRequestHeader "X-OpenAM-Password", password
```

```
Request.Send
```

Response will return authentication Token which can be stored/saved

```
{ "tokenId": "AQIC5w_TEXT_REMOVED_NTcy*", "successUrl": "/openam/console" }
```

Use Token to request MSRS download:

```
url=https://msrsapp.pjm.com/msrs/rest/secure/download/reports?shortName=TransmissionEnhancementChargeSummary&version=L&format=C&start=08/01/2018&stop=08/25/2018'
```

```
Request.Open "GET", url, False
```

```
Request.SetRequestHeader "Cookie", "pjmauth=" & token
```



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```
Request.SetRequestHeader "Suma-Account", org -- SUMA header can be removed for non-SUMA accounts  
Request.Send
```

For requesting ALL accounts associated with SUMA user url should include requestAll=true parameter:

```
url=https://msrsapp.pjm.com/msrs/rest/secure/download/reports?shortName=TransmissionEnhancementChargeSummary&version=L&format=C&start=08/01/2018&stop=08/25/2018'&requestAll=true
```

Response can be retrieved using preferred method from request object:

```
Dim ResponseArray as Variant
```

```
ResponseArray = Request.ResponseBody
```

```
Dim ResponseText as String
```

```
ResponseText = Request.ResponseText
```