Oracle® Retail EFTLink

Rest API Guide

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Oracle Retail EFTLink Rest API Guide, Release 25.0.0

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Oracle Retail EFTLink Rest-API Guide, Release 25.0.0

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Preface

The *Oracle Retail EFTLink Rest API Guide* provides an overview and how to install EFTLink Rest API.

Audience

This Installation Guide is for the following audiences:

- System administrators and operations personnel
- Database administrators
- System analysts and programmers
- Integrators and implementation staff personnel

Related Documents

For more information, see the following documents in the Release 25.0.0 documentation set:

- *Oracle Retail EFTLink Release Notes*
- *Oracle Retail EFTLink Core Configuration Guide*
- *Oracle Retail EFTLInk Framework Advanced Features Guide*
- *Oracle Retail EFTLInk Framework Installation and Configuration Guide*
- *Oracle Retail EFTLink Security Guide*
- *Oracle Retail EFTLink Xstore Compatibility Guide*
- *Oracle Retail EFTLink Validated Partners Guide*
- *Oracle Retail EFTLink Validated OPI Partners Guide*

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- Screen shots of each step you take

Review Patch Documentation

When you install the application for the first time, you install either a base release (for example, 25.0.0) or a later patch release (for example, 25.0.1). If you are installing the base release, additional patch, and bundled hot fix releases, read the documentation for all releases that have occurred since the base release before you begin installation. Documentation for patch and bundled hot fix releases can contain critical information related to the base release, as well as information about code changes since the base release.

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Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Overview

This chapter provides an overview to Rest API.

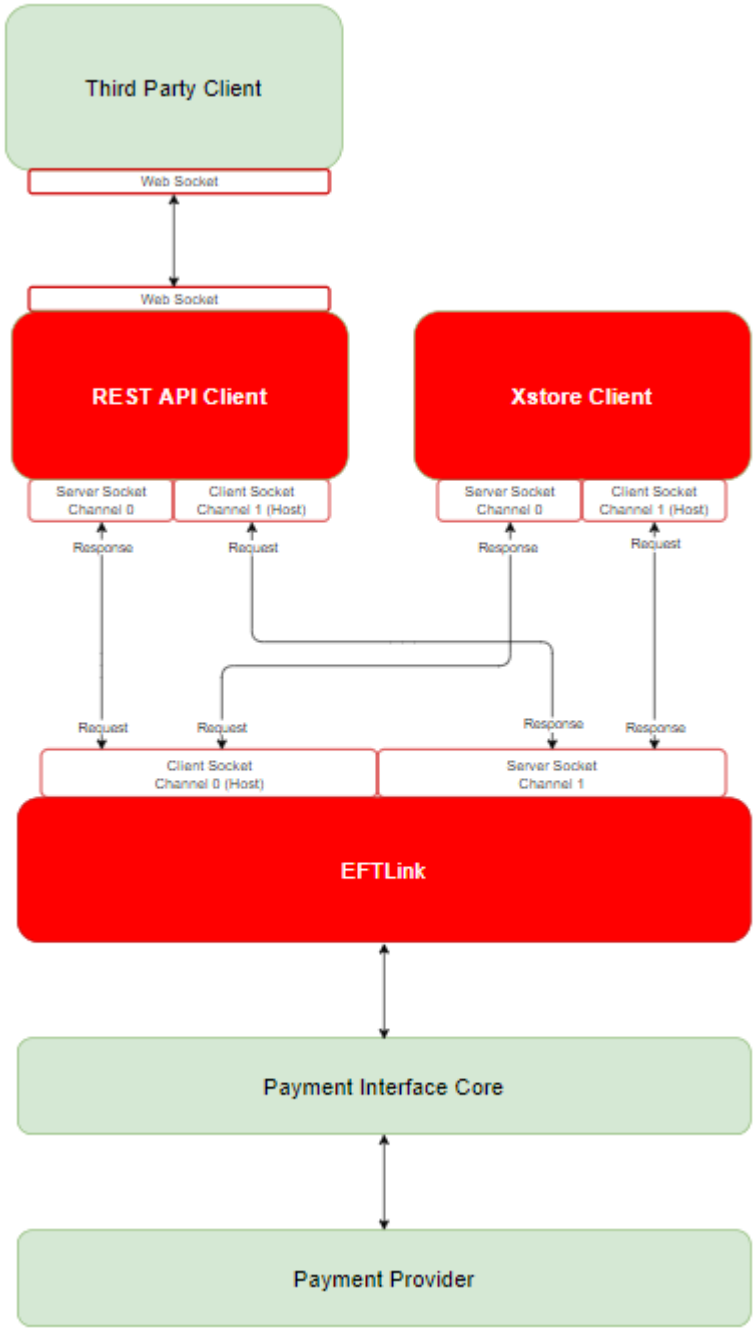
The purpose of the Rest API is for mobile or web based clients that need to communicate to EFTLink.

These clients, unlike Xstore or Xstore mobile cannot reference the eftlink.jar library. Therefore, they cannot use the existing socket API that is in EFTLink.

Rest API uses the web socket protocol in order to support full duplex communication. The client is responsible for handling the device requests coming in from EFTLink while processing a payment request.

Rest API is included as part of EFTLink and can be set up to run as a service using Tanuki wrapper. This is the recommended way.

Figure 1-1 Rest API Overview



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Installation

This chapter describes the installation of Rest API and covers the following topics:

Prerequisites

This section assumes you have already configured EFTLink following the instructions set out in the *Oracle Retail EFTLink Framework Installation and Configuration Guide*.

Configuring EFTLink Rest API

> **Note**
>
> All files necessary are already in place so long as you have completed the instructions set out in the *Oracle Retail EFTLink Framework Installation and Configuration Guide*.

It is necessary that you complete all the below sections:

Setting up Jetty for SSL Communication

1. Out of the box, the Rest API will only allow SSL communication. However, you are required to set up a key store that includes a server certificate.

   See Creating a Key Store File with Self-Signed Certificate details below on how to create a self-signed certificate.

2. Once the eftlink-rest-api "keystore" file has been created, you will need to obfuscate the password.

   See the Obfuscating Text using Jetty section below.

3. Replace the text **ObfuscatedPassword Here** with your obfuscated password.

   For example:

```
<New id="sslContextFactory"
class="org.eclipse.jetty.util.ssl.SslContextFactory">

…

<Set name="KeyStorePassword">ObfuscatedPasswordHere</Set>

<Set name="KeyManagerPassword">ObfuscatedPasswordHere</Set>

<Set name="TrustStorePassword">ObfuscatedPasswordHere</Set>

…

</New>
```

API Key Authentication

The Rest API uses an API Key for authentication. The steps below must be followed for API requests to be authenticated.

1. Generate an API Key.
2. Add `APIKey=<OBFAPIKey>` to the eftlink-rest-api.properties file, where `<OBFAPIKey>` is the obfuscated value of your API Key. See the Obfuscating Text using Jetty section below.
3. Consumers must send two subprotocols in the initial HTTP request: "oracle.eftlink.rest.api.key", which will be the negotiated subprotocol, and "oracle.eftlink.rest.api.key. <Base64URLAPIKey>", where <Base64URLAPIKey> is the base64Url-encoded SHA-384 hash of your API Key.

Linux Command:

```
echo -n '<API_KEY>' | openssl dgst -sha384 -binary | base64 | tr '+/' '-_' | tr -
d '='
```

PowerShell Command:

```
[Convert]::ToBase64String([System.Text.Encoding]::UTF8.GetBytes('<API_KEY>') | %
{ [System.Security.Cryptography.SHA384]::Create().ComputeHash($_) }) -replace '\+', '-' -
replace '/', '_' -replace '=', ''
```

Creating a Key Store File with Self-Signed Certificate

1. Open a command terminal.
2. Navigate to <eftlink installation directory>\keys or any other directory.
3. Before executing the command below, replace <java> with the location to your JDK version and replace <alias name> with a meaningful alias. Also, replace <password> with your desired password for the keystore and certificate. Make sure to note it down, as we will need to obfuscate it later.
4. Execute the command below. The command will ask of your first and last name (Common Name or CN). Enter the machine name or localhost and populate the other details.
5. Once you have provided all the information (CN, OU, O, L, ST, C), confirm that it is correct.

   The command will produce the key store file, `eftlink-rest-api.keystore`, in the current directory.

   Command:

   ```
   <java>\bin\keytool -genkey -keyalg RSA -alias <alias name> -keystore eftlink-
   rest-api.keystore -storepass <password> -validity 360 -keysize 2048
   ```

Obfuscating Text using Jetty

1. Open a command terminal.
2. Navigate to the <eftlink installation directory>\lib directory.
3. Before executing the command below, replace `<java>` with the location to your JDK version and replace `<username>` with a meaningful value. Also, replace `<password>`. The parameter `<password>` is your desired password or string you wish to obfuscate.
4. Execute the command.

   ```
   <java>\bin\java -cp jetty-util-12.0.14.jar
   org.eclipse.jetty.util.security.Password <Username> <Password>
   ```

   The output should look something like below. Note that we are only interested in the OBF value for the purposes of this document.

   ```
   OBF:1oq31uum1xtv1zej1zer1xtn1uvk1or7
   ```

   ```
   MD5:Dc647eB65e6711E155375218212b3964CRYPT:efE.3y6/wNpn6
   ```

Running EFTLink Rest API

This section describes how to install EFTLink Rest API as a service.

Windows Configuration

It is possible to install EFTLink Rest API as a windows service, using a third-party wrapper. EFTLink is distributed with a version of Tanuki Software Limited Java Service Wrapper.

Follow the steps below on how to configure EFTLink to run as a Windows service.

1. Install the Service.
   a. Open a command terminal.
   b. Navigate to the <eftlink installation directory> directory.
   c. To install EFTLink Rest API as a window service, enter `eftlink-rest-api install`.
   d. If there are problems during installation, you can remove the service by entering `eftlink-rest-api remove`. This may be necessary if the service is previously installed in a different folder. The service can then be reinstalled at the correct location by entering `eftlink-rest-api install`.
   e. Once installed, the service can be started and stopped from a command line:

      ```
      eftlink-rest-api start
      ```

      ```
      eftlink-rest-api stop
      ```

   f. The service can also be controlled from the Windows Services Control Panel applet (Rest API).
2. Examine the log file **Wrapper.log**.
   a. The log file can be found in in <eftlink installation directory>\log and is called `eftlink-rest-api_wrapper.log`.
   b. Installing, starting the service, stopping the service, and uninstalling the service are all briefly logged in `eftlink_wrapper.log`. This can be used to diagnose any problems.

Linux Configuration

It is possible to run EFTLink-rest-api as a service, using a third-party wrapper. EFTLink-rest-api is distributed with a version of Tanuki Software Limited Java Service Wrapper.

> **Note**
>
> You may be required to give script file(s) execution rights. This can be accomplished by opening a terminal window and typing:
>
> `sudo chmod +x <PathToFile>`
>
> for example, `sudo chmod +x /opt/eftlink/eftlink-rest-api.sh`

Follow the steps below on how to configure EFTLink to run as a service.

1. Running EFTLink-rest-api.
   a. From a terminal, change to the directory for EFTLink.

      For example, enter cd /opt/eftlink.

   b. To run EFTLink-rest-api as a service from a terminal, enter the following command `sudo./eftlink-rest-api.sh start`.

   c. To stop, check the status, or to restart EFTLink-rest-api from a terminal, enter one of the following commands:

      ```
      sudo./eftlink-rest-api.sh stop

      sudo./eftlink-rest-api.sh status

      sudo./eftlink-rest-api.sh restart

      sudo./eftlink-rest-api.sh condrestart
      ```

2. Examine the log file **Wrapper.log**.
   a. The log file can be found in the designated EFTLink folder\log\eftlink-rest-api_wrapper.log

   b. Starting the service and stopping the service are all briefly logged in wrapper.log. This can be used to diagnose any problems.

Self-Signed Certificate Trust

To trust the self-signed certificate in your browser:

1. Start EFTLink and EFTLink-Rest-API service.
2. Open your browser.
3. Navigate to https://localhost:8443/.
4. The browser will warn you that your connection is not private. Click on **Advance**.
5. Click **Proceed to localhost (unsafe)**.
6. Disregard the 404 not found error.
7. Your browser is now ready to communicate with the REST API using your code in the HTML file.

8. As an additional check to ensure the REST API service is running, you can perform a ping-pong test.
9. Enter https://localhost:8443/ping into your browser.

   You should receive a “pong” response.