

# **KBRA KCP Data Feed API**

## **Publication and Integration Details**

### **Contents**

1) OVERVIEW & INTRODUCTION .....	2
2) ACCESSING THE DATA FEED API.....	3
3) AUTHENTICATION & ACCESS .....	3
4) ENDPOINTS.....	5
4.1) RSS FEED ENDPOINT ( /OAUTH/RSS ) .....	5
4.1.1) RSS FEED ENDPOINT – PARAMETERS .....	5
4.1.2) RSS FEED ENDPOINT – CHANNEL.....	5
4.1.3) RSS FEED ENDPOINT – ITEM .....	6
4.1.4) RSS FEED ENDPOINT – ELEMENTS .....	6
4.2) REPORT DOWNLOAD ENDPOINT (/OAUTH/DOWNLOAD/{ID}) .....	7
4.2.1) KCP ANALYSIS DETAILS XML (PRIMARY REPORT) .....	7
4.2.2) OTHER KCP REPORTS.....	8
5) INTEGRATION EXAMPLES .....	8
6) SUPPORT .....	10

1) OVERVIEW & INTRODUCTION

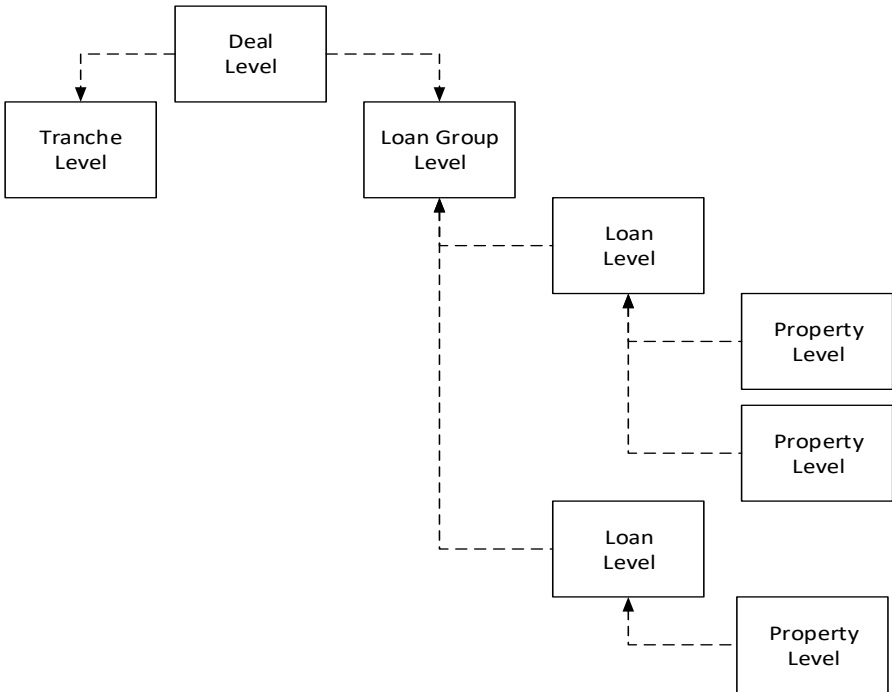
The KBRA KCP Data Feed is designed to provide our clients with a broader set of data backing up the KCP analysis then is available via the Excel reports on our website. This information is available technically via our API.

The KCP team of analysts reviews each CMBS deal under coverage each month and produces a report on that deal. Once the report of the analysis is approved, it is published to our website. The publication of the XML data to the endpoint is done simultaneously with the publication to our website. There are generally 15 - 30 reports published each business day. Reports can be published any day of the week, but will not be published between 2AM and 6AM Eastern Time.

The Data Feed is designed to allow our clients to consume the XML data into their own data structures and utilize the data to enhance their own analytics. The XML format was chosen in order to be as platform independent as possible, as well as to more clearly show the relationship of the entities in the data structure. At this time, KBRA does not provide a database structure or conversion scripts along with the XML data.

The general relationship of the entities is shown in the diagram below. The highest level entity is the Deal, as we will publish a new set of analysis on each deal for each remittance period. Clients can choose to structure their data store to overwrite the previous information on a particular deal, or to maintain a history of our analysis.

The diagram below depicts a cross-collateralized set of loans, one of which has multiple properties. While most Loan Groups in the analysis will only have a single loan being secured by a single property, there will be structures that have multiple nodes at the Loan and Property levels.



Besides this Overview documentation, additional documentation is also available. The additional documentation will provide a sample of what a fully populated XML file will look like, as well as a data dictionary for the fields in the XML file. The data dictionary is generally provided inside of a sample schema of the XML, but is also available as a separate document.

## 2) ACCESSING THE DATA FEED API

In order to access the Data Feed API, a client must have KBRA provided credentials. In order to obtain those credentials, please email [kcp-datafeed@kbra.com](mailto:kcp-datafeed@kbra.com) and request a set of credentials.

You will then receive a Client ID and Client Secret. These client credentials are what you will need to exchange for an Access Token.

The Data Feed API access implementation is based on the Client Credentials Grant flow of the OAuth2 specification. With this access, you will be able to acquire the deal publication RSS feed.

## 3) AUTHENTICATION & ACCESS

The Data Feed API access authorization flow follows these basic steps:

1. Client makes a request to the **POST /oauth** endpoint to exchange their client credentials for an Access Token.
2. Once in possession of the Access Token, the Client can then access resources behind the **/oauth** endpoint.

There are a few technical limitations that should be noted:

- The Client must provide the given Access Token as a query parameter on the endpoint every time they are making a call behind the **/oauth** endpoint.
- All Access Tokens have an expiration time of 120 seconds from initial issuance.
- In order to communicate with the Data Feed API, SSL is required

### **Step 1: Obtain an Access Token**

Your client key and secret must be exchanged for an access token by issuing a request to **POST /oauth**:

- The request must be a HTTP POST request.
- The body of the request must include the client key, client secret, and grant type.
  - Ex:  
`grant_type=client_credentials&client_id=test_client&client_secret=test_secret`

- The request must include a **Content-Type** header with the value of:  
application/x-www-form-urlencoded

### *Example Request:*

```
POST /oauth
Host: kcp.krollbondratings.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/36.0.1985.125 Safari/537.36
Content-Type: application/x-www-form-urlencoded
Accept: */*

grant_type=client_credentials&client_id= client_1_20_1406828366&client_secret=
MGIvwmk2jgE9oQyiJebV
```

### *Example Response:*

```
Status: 200 OK
Content-Type: application/json
...
Content-Length: 111

{"access_token":"4ee0eec5250e729d3ae8f85c6a385dc82e91146f","expires_in":120,"token_type":"Bearer","scope":null}
```

## **Step 2: Authenticate API endpoints with provided access token**

Once the Client is in possession of the Access Token, it may be used to issue requests to the Data Feed API endpoints described in this document. To use the access token, construct a normal HTTPS GET request with an access\_token query parameter containing the token.

### *Example Request:*

```
GET /oauth/rss?access_token=4ee0eec5250e729d3ae8f85c6a385dc82e91146f
Host: kcp.krollbondratings.com
User-Agent: Mozilla/5.0 (Windows NT 6.1; WOW64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/36.0.1985.125 Safari/537.36
Content-Type: text/plain; charset=utf-8
Accept: */*
```

## 4) ENDPOINTS

The Data Feed API contains two primary endpoints through which you may obtain resources. The first one is the RSS Feed which provides details on Deals that have been recently published. Once the Client knows which Deals have reports available, they can then query the second endpoint, the Report Download endpoint for downloading actual reports.

In all cases, the Client needs to include an Access Token in any call they are making behind the **/oauth** endpoint.

### 4.1) RSS FEED ENDPOINT ( /OAUTH/RSS )

The RSS Feed endpoint provides a RSS feed of information as deals are published. The feed itself follows the [RSS 2.0 specification](#) of required fields, as well as a pubDate field at the Channel and Item levels. In addition to the standard elements, a 'kcp' namespace has been defined to [extend RSS](#) for displaying reports published with the deal.

#### 4.1.1) RSS FEED ENDPOINT – PARAMETERS

PARAMETER	REQUIRED	REQUIREMENTS	DESCRIPTION
SINCE	No	<i>Format:</i> <a href="#">RFC822</a> <i>Ex:</i> Mon, 15 Aug 14 15:52:01 +0000	Include this query parameter to specify the start date for this feed.

Note: We recommend that you initially call this end point without a SINCE date specified, to receive all the publication events currently available. For subsequent calls, you should specify the pubDate value from the RSS feed as the SINCE value. This will ensure that you only see new events since your last request.

When calling without a SINCE date specified, you will only receive reports published in the previous seven (7) days.

#### 4.1.2) RSS FEED ENDPOINT – CHANNEL

The primary channel serves as a container for items and provides basic information about the RSS feed.

FIELD NAME	DESCRIPTION
title	RSS Feed title
link	RSS Feed location – this is the authenticated REST API endpoint for accessing the feed.
description	Sentence describing the channel and our contact information.

pubDate	The <a href="#">RFC822</a> formatted date of the most recent deal publication date. This defaults to today's date if there have been no deals updated since the 'since' date.
---------	---

#### 4.1.3) RSS FEED ENDPOINT – ITEM

Each item represents a deal published since the given (or default) 'since' date.

FIELD NAME	DESCRIPTION
Title	Bloomberg deal name + Surveillance Tape Date
Link	Link to Loan Group XML Report associated with the given deal. This is an id appended to the Report Download endpoint.
pubDate	The <a href="#">RFC822</a> formatted date this deal was published.
kcp:reports	A collection of kcp:report elements representing the reports published with the given deal. Each of these elements consists of a report <i>name</i> attribute, and the primary element content is a link to a Report Download endpoint for the given report.

Note: *report* elements are defined in the KCP namespace as allowed for by the RSS specification and [described by the W3C](#).

#### 4.1.4) RSS FEED ENDPOINT – ELEMENTS

*Example Response:*

```
<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:kcp="http://schema.kbra.com/kcp/rss" version="2.0">
  <channel>
    <title>KCP Publication Feed</title>
    <link>https://kcp.krollbondratings.com/oauth/rss</link>
    <description>Please contact kcphelp@kbra.com with any questions or concerns.</description>
    <pubDate>Mon, 15 Aug 14 15:52:01 +0000</pubDate>
    <item>
      <title><![CDATA[BACM 2007-2 - Jan 14]]></title>
      <link>https://kcp.krollbondratings.com/oauth/download/e8b622c3-8c91-5e51-8bed-f2e92042</link>
      <pubDate>Mon, 15 Aug 14 15:52:01 +0000</pubDate>
      <kcp:reports>
```

```

    <kcp:report name="KCP Report">
https://kcp.krollbondratings.com/oauth/download/cd8538e1-07bf-580d-b94c-1a20ba5b</kcp:report>
    <kcp:report name="Distressed Asset Summary">
https://kcp.krollbondratings.com/oauth/download/1d83b0f2-71dc-5bb0-9fe2-c5cb45c0</kcp:report>
    <kcp:report name="K-LOC Data - Premium">
https://kcp.krollbondratings.com/oauth/download/92fe3081-2da2-53bc-970c-cdc3572b</kcp:report>
    <kcp:report name="Exportable Tables">
https://kcp.krollbondratings.com/oauth/download/f3f45aeb-f468-5596-b10c-cf59cf5e</kcp:report>
    </kcp:reports>
  </item>
</channel>
</rss>

```

## 4.2) REPORT DOWNLOAD ENDPOINT (/OAUTH/DOWNLOAD/{ID})

The Report Download endpoint provides access to all of the KCP reports via links provided in the RSS feed. The primary link at the item level will download the XML data report for that particular deal/remittance date combination. You can access any of the other KCP reports available via the download links specified in the RSS feed. There are no optional query parameters. The id route parameter is required and provided with the link to the download.

As a reminder, the Client needs to include an Access Token in any call they are making behind the **/oauth** endpoint.

### 4.2.1) KCP ANALYSIS DETAILS XML (PRIMARY REPORT)

The primary report for the KCP data feed is provided in XML. After each remittance report is received, a KCP Analyst will review the data and complete a new report. Once that report is approved, it will be published and shows as available via the RSS Feed. Occasionally, the KCP team will receive updated information on a Deal for the same remittance period. Should that new information require a report to be published, the XML file will appear again for that Deal/remittance period. Should that occur, you should overwrite the initial file for that period, as the later file will have a complete set of more up to date information.

In addition to this document, documentation for the file’s schema and data types is provided in a [RELAX NG](#) file that is included with this one. The RELAX NG documentation contains a custom namespace, kcp, which provides the following fields:

Field Name	Description
description	KBRA’s definition of the given element and an overview of what data may appear there and how it is sourced.

#### 4.2.2) OTHER KCP REPORTS

All other KCP reports are available for download via the Report Download Endpoint as well. This can be accomplished by calling the URL provided in the RSS Feed for that specific report. As a reminder, the Client needs to include an Access Token in any call they are making behind the **/oauth** endpoint.

This list may change based on KBRA's offerings and your contract. For additional details on the available reports, please contact [kcp-datafeed@kbra.com](mailto:kcp-datafeed@kbra.com).

### 5) INTEGRATION EXAMPLES

In order to ensure that you are able to interact with the data feed API, we have provided the following examples of code. Please note that the client credentials shown below would need to be replaced with the set provided to you.

To retrieve an Access Token:

```
curl --data
"grant_type=client_credentials&client_id=client_111&client_secret=YT1UMfrvBnA3zQba2sDK"
https://kcp.krollbondratings.com/oauth

{"access_token":"73fde468234b3643d64599e7f098a5f13127b1f3","expires_in":120,"token_type":"Bearer",
"scope":null}
```

Using the Access Token to make your initial call to the RSS Feed Endpoint:

```
curl
https://kcp.krollbondratings.com/oauth/rss?access_token=73fde468234b3643d64599e7f098a5f13127b1f3

<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:kcp="http://schema.kbra.com/kcp/rss" version="2.0">
  <channel>
    <title>KCP Publication Feed</title>
    <link>https://kcp.krollbondratings.com/oauth/rss</link>
    <description>Please contact kcp@kbra.com with any questions or concerns.</description>
    <pubDate>Fri, 26 Sep 14 13:35:29 -0400</pubDate>
    <item>
      <title><![CDATA[UBSC 2011-C1 - Aug 14]]></title>
      <link>
https://kcp.krollbondratings.com/oauth/download/698f063c-ed6c-5bc8-a042-f7ed9f96</link>
      <pubDate>Mon, 08 Sep 14 20:09:31 -0400</pubDate>
      <kcp:reports>
        <kcp:report name="KCP Report">
https://kcp.krollbondratings.com/oauth/download/d429bc12-c44e-5de5-9d05-67b51660</kcp:report>
        <kcp:report name="Distressed Asset Summary">
```



```
https://kcp.krollbondratings.com/oauth/download/43413a15-eafb-5f31-bb36-2fa1fdf6</kcp:report>
  <kcp:report name="K-LOC Data - Premium">
https://kcp.krollbondratings.com/oauth/download/088ad09b-ae04-5e5e-8154-49572522</kcp:report>
  <kcp:report name="Exportable Tables">
https://kcp.krollbondratings.com/oauth/download/66d55281-1610-5222-bf9d-75665c4b</kcp:report>
  <kcp:report name="Remittance">
https://kcp.krollbondratings.com/oauth/download/d5103373-4bf4-5a60-a9bd-6ee00dc9</kcp:report>
  <kcp:report name="Investor Reporting Package">
https://kcp.krollbondratings.com/oauth/download/36557915-35f0-515a-9608-623bb371</kcp:report>
  </kcp:reports>
</item>
...
</channel>
</rss>
```

Using the Access Token to make a subsequent call to the RSS Feed Endpoint using the SINCE parameter:

**curl**

```
https://kcp.krollbondratings.com/oauth/rss?access_token=73fde468234b3643d64599e7f098a5f13127b1f3&since=Fri%2C+26+Sep+14+13%3A35%3A29+-0400
```

```
<?xml version="1.0" encoding="UTF-8"?>
<rss xmlns:kcp="http://schema.kbra.com/kcp/rss" version="2.0">
  <channel>
    <title>KCP Publication Feed</title>
    <link>https://kcp.krollbondratings.com/oauth/rss</link>
    <description>Please contact kcp@kbra.com with any questions or concerns.</description>
    <pubDate>Fri, 26 Sep 14 13:35:29 -0400</pubDate>
    <item>
      <title><![CDATA[MSC 2005-IQ10 - Sep 14]]></title>
      <link>
https://kcp.krollbondratings.com/oauth/download/64880e78-3fab-5962-9e4a-7f0b8244</link>
      <pubDate>Fri, 26 Sep 14 13:35:29 -0400</pubDate>
      <kcp:reports>
        <kcp:report name="KCP Report">
https://kcp.krollbondratings.com/oauth/download/8b1f28b8-c3db-534a-a063-549528c7</kcp:report>
        <kcp:report name="Distressed Asset Summary">
https://kcp.krollbondratings.com/oauth/download/474ab4c0-9e64-5718-9440-dfd30715</kcp:report>
        <kcp:report name="K-LOC Data - Premium">
https://kcp.krollbondratings.com/oauth/download/bacc68d8-2e23-5c5a-9be9-728d8513</kcp:report>
        <kcp:report name="Exportable Tables">
https://kcp.krollbondratings.com/oauth/download/a7b10f98-6687-5382-9854-511af245</kcp:report>
        <kcp:report name="Remittance">
https://kcp.krollbondratings.com/oauth/download/c2027833-c7c7-5bfff-bac4-7e434536</kcp:report>
        <kcp:report name="Investor Reporting Package">
https://kcp.krollbondratings.com/oauth/download/50d5dc22-0c41-5499-8456-d751ef11</kcp:report>
      </kcp:reports>
    </item>
  </channel>
</rss>
```

Retrieving an XML Report from the Report Download Endpoint:

```
curl -o 64880e78-3fab-5962-9e4a-7f0b8244.xml
https://kcp.krollbondratings.com/oauth/download/64880e78-3fab-5962-9e4a-7f0b8244?access_token=73fde468234b3643d64599e7f098a5f13127b1f3

% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100 1852k    100 1852k    0     0 1542k      0  0:00:01  0:00:01 --:--:-- 1583k
```

Retrieving a KCP PDF Report from the Report Download Endpoint:

```
curl -o 8b1f28b8-c3db-534a-a063-549528c7.pdf
https://kcp.krollbondratings.com/oauth/download/8b1f28b8-c3db-534a-a063-549528c7?access_token=73fde468234b3643d64599e7f098a5f13127b1f3

% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total     Spent    Left     Speed
100  268k    100  268k    0     0  193k      0  0:00:01  0:00:01 --:--:--  207k
```

6) SUPPORT

Support for all questions is available at [kcp-datafeed@kbra.com](mailto:kcp-datafeed@kbra.com). This mail box is monitored by a combination of business and technical team members to ensure a prompt and accurate reply.