

# Oracle® Health Sciences Mobile Clinical Research Associate Server

Application Programming Interface Guide

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This document contains information on public Application Programming Interfaces (APIs) that can be used to interface with Oracle Health Sciences Mobile Clinical Research Associate Server (Mobile CRA).

It contains the following topics:

- [Section 1, "Using Application Programming Interfaces"](#)
- [Section 2, "RESTful Application Programming Interfaces"](#)

## 1 Using Application Programming Interfaces

This section describes how to use open Site-at-a-Glance (SAAG) Service Representational State Transfer (REST) APIs. It contains the following topics:

- [Section 1.1, "About Application Programming Interfaces"](#)
- [Section 1.2, "Calling APIs from Outside the Mobile Clinical Research Associate Server"](#)

### 1.1 About Application Programming Interfaces

Mobile CRA includes a set of APIs that lets you do most things through the user interface, including creating, modifying, and installing objects.

You can call Oracle Mobile CRA APIs from source code in a defined program in Mobile CRA. In this case, no additional security or setup is required.

You can let people in your company perform actions on Mobile CRA objects from an external system.

### 1.2 Calling APIs from Outside the Mobile Clinical Research Associate Server

There are two kinds of APIs created in the system, that is, admin APIs and non-admin APIs. The admin APIs and non-admin APIs can be authenticated using the basic authentication.

## 2 RESTful Application Programming Interfaces

REST is a software architecture for distributed hypermedia systems such as the World Wide Web. An API is described as RESTful when it conforms to the tenets of REST.

This section contains the following topics:

- [Section 2.1, "Administration Application Programming Interfaces"](#)
- [Section 2.2, "Non-Administration Application Programming Interfaces"](#)

## 2.1 Administration Application Programming Interfaces

This section contains the following topic:

- [Section 2.1.1, "Create Client"](#)

### 2.1.1 Create Client

This API is used to create a new client. You cannot create the client in the Administration User Interface (UI). Only one client must be created. You must create the client before creating sources. The client name must be the same as mentioned in WebLogic Security Realm under client Role.

#### URL

`http://server:port/mobilecraservices/rest/clients`

#### Request Type

HTTP POST

#### Request Header Parameters

Username: Adaptive SAAG Admin user name.

Password: Adaptive SAAG Admin password.

#### Request Parameters

clientName: Name of the client to be created.

clientDesc (optional): Short description.

numKpiToStore: Number of KPIs that are used to display in the trending graph. By default, the value is 6. This value is the number of bars shown in the SAAG UI, that is, the three trending graphs shown in the site selection slide. You cannot change this value once it is set.

#### Response Parameters

clientId: ID of the client created.

Error Code: Indicates success or failure.

## 2.2 Non-Administration Application Programming Interfaces

This section contains the following topics:

- [Section 2.2.1, "Source"](#)
- [Section 2.2.2, "KPI Definition"](#)
- [Section 2.2.3, "KPI Data"](#)
- [Section 2.2.4, "User"](#)
- [Section 2.2.5, "Alert Definition"](#)
- [Section 2.2.6, "Alert Subscription"](#)

- [Section 2.2.7, "Alert Message"](#)
- [Section 2.2.8, "Alert Message Data"](#)

## 2.2.1 Source

This section contains the following APIs:

- [Section 2.2.1.1, "Create Source"](#)
- [Section 2.2.1.2, "List All Sources"](#)

### 2.2.1.1 Create Source

This API is used to create a source for a client. You can create the source in the Administration UI. One source must be created for each external data source. Sources are subordinate to a client, which requires a client ID when calling the API. The source name must be the same as mentioned in the WebLogic Security Realm under source Role.

#### URL

`http://server:port/mobilecraservices/rest/sources`

#### Request Type

HTTP POST

#### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### Request Parameters

sourceName: Name of the source to be created.

sourceDesc (optional): Short description.

sourceType: Indicates a KPI source or alert source.

#### Response Parameters

Source ID: ID of the source created. This should be used for registering and populating the KPI.

Error Code: Indicates success or failure.

### 2.2.1.2 List All Sources

This API is used to list all sources for a Client.

#### URL

`http://server:port/mobilecraservices/rest/sources`

**Request Type** HTTP GET

#### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

### Response Parameters

List of sources: List of Sources registered for a client (ID, name, description, and type).

Error Code: Indicates success or failure.

## 2.2.2 KPI Definition

This section contains the following APIs. You can create KPIs manually in the Administration UI. These APIs lets you create scripts and replicate setup in different instances (that is, test, QC, validation, and production).

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**Note:** The order of the KPIs in the KPI Administration screen impacts the display of the KPIs items. You cannot change the order through API.

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- [Section 2.2.2.1, "Create KPI Definition"](#)
- [Section 2.2.2.2, "List All KPI Definition"](#)
- [Section 2.2.2.3, "Update KPI Definition"](#)
- [Section 2.2.2.4, "Delete KPI Definition"](#)

**2.2.2.1 Create KPI Definition** This API is used to create a new KPI Definition for a particular source.

### URL

`http://server:port/mobilecraservices/rest/kpidefs`

### Request Type

HTTP POST

### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

### Request Parameters

sourceId: The source for which the KPI needs to be created.

kpiName: KPI Name.

kpiDisplayName: Display Name to be used by Client.

kpiScope: Scope of KPI (GENERIC, STUDY, or STUDY-SITE).

kpiDesc (optional): Description of the KPI

kpiDataType (optional): Data type of the KPI (INTEGER or FLOAT). By default, the data type is FLOAT.

kpiSeqNo: Sequence number of KPI

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**Note:** KpiScope and kpiDataType must always be entered in capital letters.

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#### **Response Parameters**

kpiId: ID of the KPI definition created. It is used to populate the KPI data.

Error Code: Indicates success or failure.

#### **2.2.2.2 List All KPI Definition**

This API is used to register all KPIs for a client.

#### **URL**

http://server:port/mobilecraservices/rest/kpidefs?sourceType=KPI

#### **Request Type**

HTTP GET

#### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### **Response Parameters**

List of KPI: List of KPI registered for the client (ID, name, description, or data type).

Error Code: Indicates success or failure.

#### **2.2.2.3 Update KPI Definition**

This API is used to update an existing KPI definition for a Client.

**URL** http://server:port/mobilecraservices/rest/kpidefs/{kpiid}

#### **Request Type**

HTTP PUT

#### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### **Request Parameters**

kpiSeqNo: Sequence number of KPI.

kpiDisplayName: Display Name to be used by client UI.

kpiDesc: Description of the KPI.

#### **Response Parameters**

Error Code: Indicates success or failure.

#### **2.2.2.4 Delete KPI Definition**

This API is used to delete an existing KPI definition for a client.

#### **URL**

http://server:port/mobilecraservices/rest/kpidefs/{kpiid}

#### **Request Type**

HTTP DELETE

#### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### **Response Parameters**

Error Code: Indicates success or failure.

#### **2.2.3 KPI Data**

This section contains the following APIs. These APIs lets you submit data to display in SAAG and retrieve information for the display.

- [Section 2.2.3.1, "Post KPI Data"](#)
- [Section 2.2.3.2, "Get SAAG KPI Data"](#)
- [Section 2.2.3.3, "Get Trending Graph KPI Data"](#)

##### **2.2.3.1 Post KPI Data**

This API is used to post KPI data. Data can be submitted at the client or source level (which does not impact the display), and at the study or study-site level. Study KPIs display the same data regardless of the study-site selected.

#### **URL**

http://server:port/mobilecraservices/rest/kpidata

#### **Request Type**

HTTP POST

#### **Request Header Parameters**

Username: Adaptive SAAG Source user name

Password: Adaptive SAAG Source password

Type: Access Type (Source)

ID: Source ID

#### **Request Parameters**

List< KPIData>: List of KPI data having the following fields.

kpiInfoId: KPI ID

studyId: Required in case of study or study-site KPI.

siteId: Required in case of study site kpi.

kpiValue: KPI value (float or integer).

kpiName: Required along with source ID in case the KPI ID is not entered.

sourceId: Required in case of client only.

#### **Response Parameters**

Error Code: Indicates Success or Failure.

#### **2.2.3.2 Get SAAG KPI Data**

This API is used to get the SAAG KPI data.

#### **URL**

http://server:port/mobilecraservices/rest/kpidata/saag?studyId={Study Id}&siteId={Site Id}

#### **Request Type**

HTTP GET

#### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### **Request Parameters**

studyId: Study ID

siteId: Site ID

#### **Response Parameters**

Error Code: Indicates success or failure.

studyData

```
{  
  "kpiId": ,  
  "kpiName": " ",  
  "kpiValue": " ",  
  "kpiDisplayName": ,  
  "kpiSeqNo":
```

```

}
genericData
{
  "kpiId": ,
  "kpiName": " ",
  "kpiValue": " ",
  "kpiDisplayName": ,
  "kpiSeqNo":
}
siteListData
{
  "siteId": "A",
  "siteData": [{
    "kpiId": ,
    "kpiName": " ",
    "kpiValue": " ",
    "kpiDisplayName": ,
    "kpiSeqNo":
  }]
}

```

### 2.2.3.3 Get Trending Graph KPI Data

This API is used to get trending graph KPI data.

#### URL

<http://server:port/mobilecraservices/rest/kpdata/graph?studyId={Study Id}&siteId={Site Id}&count=1>

#### Request Type

HTTP GET

#### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

#### Request Parameters

studyId: Study ID

siteId (Optional): Site ID

Count (Optional): Number of KPIs to be used for graph. By default, the value is 3.



## Response Parameters

Error Code: Indicates success or failure.

studyId

siteDataList:

```
[
  {
    "studyId": "A",
    "siteId": "Site A",
    "kpiList": []
  }
]
```

kpiList:

```
[
  {
    "data": [ ],
    "kpiId": 1,
    "kpiName": "A",
    "kpiDisplayName": "Display"
  }
]
```

Data:

```
{
  "kpiData": "1"
}
```

## 2.2.4 User

This section contains the following user level APIs. For an implementation that involves Adaptive SAAG server, the server code handles the user registration automatically during login.

- [Section 2.2.4.1, "Registering the User"](#)
- [Section 2.2.4.2, "Update User"](#)

### 2.2.4.1 Registering the User

This API is used to register a user.

#### URL

<http://server:port/mobilecraservices/rest/user>

#### Request Type

HTTP POST

### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

### Request Parameters

userName: Name of the user to be created.

deviceId: Device ID of the device on which user has logged.

regToken: Registration token from Health Sciences Push Notification Service (HSPNS).

### Response Parameters

userId: ID of registered user.

Error Code: Indicates success or failure.

### 2.2.4.2 Update User

This API is used to update user details.

### URL

http://server:port/mobilecraservices/rest/user/{userId}

### Request Type

HTTP PUT

### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

### Request Parameters

deviceId: Device ID of the device on which user has logged.

registrationToken: Registration token from HSPNS.

### Response Parameters

Error Code: Indicates success or failure.

### 2.2.5 Alert Definition

This section contains the following APIs. Alerts can be manually created in the Administration UI. These APIs lets you create scripts and replicate setup in different instances (that is, test, QC, validation, and production).

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**Note:** These alerts on the UI is displayed in a separate section called the 3rd Party Alerts.

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- [Section 2.2.5.1, "Create Alert Definition"](#)

- [Section 2.2.5.2, "List All Alert Definition"](#)
- [Section 2.2.5.3, "Update Alert Definition"](#)
- [Section 2.2.5.4, "Delete Alert Definition"](#)

#### **2.2.5.1 Create Alert Definition**

This API is used to create a new alert definition for a particular source.

##### **URL**

`http://server:port/mobilecraservices/rest/alertdefs`

##### **Request Type**

HTTP POST

##### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

##### **Request Parameters**

sourceId: The source for which the alert needs to be created.

alertName: Alert name.

alertDesc (optional): Description of the alert.

alertDisplayName: Display name of the alert.

##### **Response Parameters**

alertId: ID of the alert definition that is used to populate the alert data.

Error Code: Indicates success or failure.

#### **2.2.5.2 List All Alert Definition**

This API is used to get all the alerts registered for a client.

##### **URL**

`http://server:port/mobilecraservices/rest/alertdefs`

##### **Request Type**

HTTP GET

##### **Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

##### **Request Parameters**

Client ID: ID of the client for listing alert definitions.

**Response Parameters**

List of Alerts: List of alerts registered for the client (ID, source ID, name, description, displayName, and isSubscribed).

Error Code: Indicates success or failure.

**2.2.5.3 Update Alert Definition**

This API is used to update an existing alert definition.

**URL**

http://server:port/mobilecraservices/rest/alertdefs/{alertId}

**Request Type**

HTTP PUT

**Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

**Request Parameters**

alertName: Name of the KPI.

alertDesc (optional): Description of the alert.

alertDisplayName: Display name of the alert.

**Response Parameters**

Error Code: Indicates success or failure.

**2.2.5.4 Delete Alert Definition**

This API is used to delete an existing alert definition for a Client.

**URL**

http://server:port/mobilecraservices/rest/alertdefs/{alertId}

**Request Type**

HTTP DELETE

**Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (Client)

**Response Parameters**

Error Code: Indicates success or failure.

## 2.2.6 Alert Subscription

When you subscribe to 3rd party alerts, the system automatically registers you for such alerts. The following APIs are involved during the subscription process that uses the user ID.

- [Section 2.2.6.1, "Subscribe Alert"](#)
- [Section 2.2.6.2, "Unsubscribe Alert"](#)

### 2.2.6.1 Subscribe Alert

This API is used to subscribe an alert for a user.

#### URL

`http://server:port/mobilecraservices/rest/alertsub`

#### Request Type

HTTP POST

#### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (User)

Id: User ID

#### Request Parameters

alertSubId: The alert subscription ID for which the alert is subscribed.

#### Response Parameters

SubscriptionId: Subscription ID of subscribed alert.

Error Code: Indicates success or failure.

### 2.2.6.2 Unsubscribe Alert

This API is used to unsubscribe an alert for a user.

#### URL

`http://server:port/mobilecraservices/rest/alertsub/{alertSubId}`

#### Request Type

HTTP DELETE

#### Request Header Parameters

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (User)

Id: User ID

#### Response Parameters

Error Code: Indicates success or failure.

## 2.2.7 Alert Message

This section contains the following APIs. The post alert message API sends alert to the Alerts repository.

- [Section 2.2.7.1, "Post Alert Message"](#)

### 2.2.7.1 Post Alert Message

This API is used to post alert messages.

#### URL

`http://server:port/mobilecraservices/rest/asaagnotifications`

#### Request Type

HTTP POST

#### Request Header Parameters

Username: Adaptive SAAG Source user name

Password: Adaptive SAAG Source password

Type: Access Type (Source)

Id: SourceId

#### Request Parameters

List< AlertMessage> contains: List of alert data having the following fields:

alertInfoId: AlertInfoId is Alert ID.

alertName: Required in case alert ID is not present.

sourceId: Required in case of client only.

alertMessage: Alert message.

#### Response Parameters

Error Code: Indicates success or failure.

## 2.2.8 Alert Message Data

This section contains the following APIs:

- [Section 2.2.8.1, "Get Alert Message Data"](#)
- [Section 2.2.8.2, "Update Alert Message Data"](#)

### 2.2.8.1 Get Alert Message Data

This API is used to post alert messages.

#### URL

`http://server:port/mobilecraservices/rest/asaagnotifications?startid=5&limit=10`

#### Request Type

HTTP GET

**Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (User)

Id: User ID

**Request Parameters**

List< AlertMessage> contains: List of alert data having the following fields:

startId (optional): Start ID of the next batch of notification. Defaults to the first notification.

limit (optional): Number of messages to be retrieved. By default, the value is 50.

**Response Parameters**

List of Notifications: Notification list with the following data:

```
{
  "date": "2013-06-21T16:57:06+0530",
  "userId": null,
  "header": "Display Name",
  "notificationId": 54,
  "read": true,
  "important": true,
  "notificationText": "Test Message 1"
}
```

nextPageStartId: Start ID to be used to get the next batch.

Error Code: Indicates success or failure.

**2.2.8.2 Update Alert Message Data**

This API is used to post alert messages.

**URL**

http://server:port/mobilecraservices/rest/asaagnotifications/{notificationId}

**Request Type**

HTTP PUT

**Request Header Parameters**

Username: Adaptive SAAG Client user name

Password: Adaptive SAAG Client password

Type: Access Type (User)

Id: User ID

### Request Parameters

read: Flag to mark as read.

important: Flag to mark important (either read or important needs to be present as part of request). The accepted value is true or false.

### Response Parameters

Error Code: Indicates success or failure.

## 3 Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

<http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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