



IBM Intelligent Operations Center V1.6 REST APIs

Document version 1.0.1

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1 IBM Intelligent Operations Center REST Interface

IBM Intelligent Operations Center provides a set of APIs that are implemented using Representational State Transfer (REST) Services. The REST services provide a set of uniform resource identifiers (URIs) that access data in IBM Intelligent Operations Center components, such as system properties and key performance indicators (KPIs).

You can call the services with any HTTP client application, and define an expected response in the form of a JavaScript Object Notation (JSON) object. The JSON format can be easily parsed and processed by JavaScript, and other products, tools, and languages, which gives you greater flexibility in using your own environment.

Many of the services take a simple HTTP GET URI as input. More complicated services take JSON input through HTTP GET for retrieval, HTTP POST for create, or HTTP PUT for update. Results are returned in JSON, and error messages and status indicators are returned in the HTTP response as JSON output.

1.1 Resource URIs

Each IBM Intelligent Operations Center REST resource URI has the following format:

```
http://{host}:{port}//ibm/ioc/api/{service-name}/{resource}?{parameters}
```

1.2 Security

Access to the REST services is restricted to authorized IBM Intelligent Operation Center users. In addition, access to the POST, PUT and DELETE methods for most services is restricted to administrative users. Administrative users are members of the `wpsadmins` and `CityWideAdmin` user groups. Access privileges for each service are specified in the service sections that are contained in this document.

1.3 Design

The IBM Intelligent Operations Center REST services are built upon the following common design diagram.

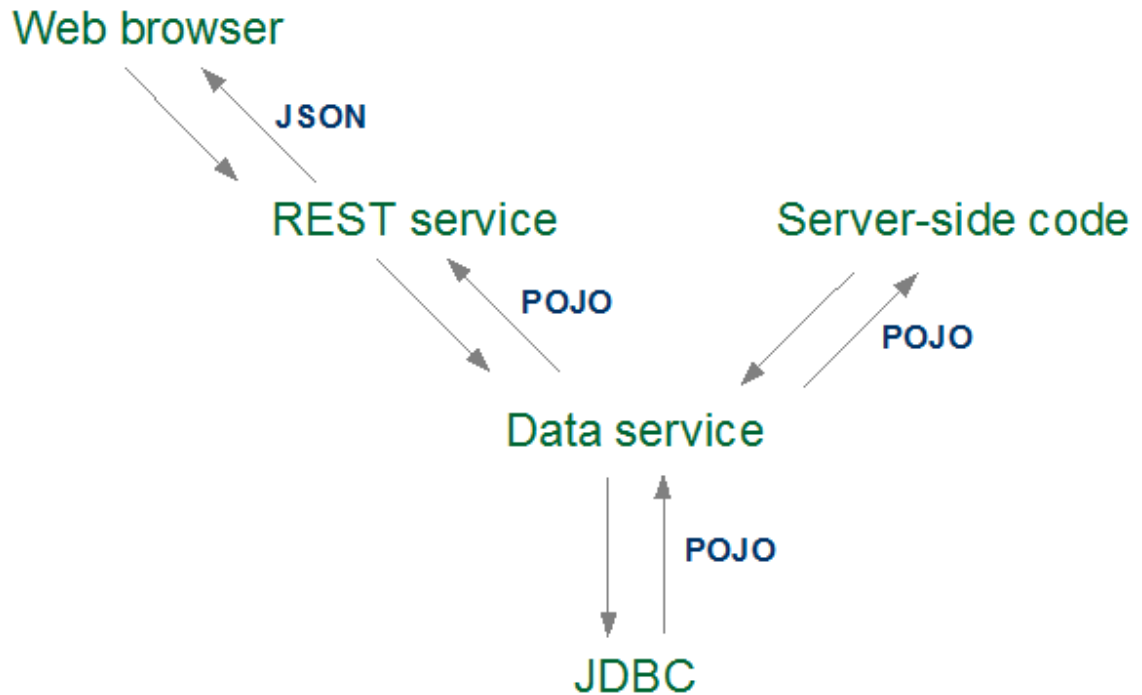


Figure 1 REST service design

The design allows for the function that is implemented by the REST service to be processed either from a web browser's standard REST service call, or from another server-side client. To do this, the design specifies a data service class. The data service class contains the function that is implemented by the REST service. Because the function is now separate from the REST service, other server-side code might access the function without requiring a full HTTP REST call. The REST service becomes a wrapper around the data service.

In this design, the plain old Java object (POJO) classes transport the incoming parameters and any outgoing result. The same POJO classes are used throughout the design and consist primarily of attributes, getter and setter methods, and a few additional helper methods.

The data service class hides the underlying implementation that is used to interact with the actual data. Usually, the underlying implementation is JDBC, but it might be LDAP or some other non-database API. None of the code, except for the data service, should directly access the underlying implementation. All the code should only access either the data service, or the REST service.

The design is implemented in package `com.ibm.ioc.rest` in the `ioc.jar` that is available in IBM Intelligent Operations Center V1.6.0. Here are some highlights of the available classes:

- **RestResource:** An abstract class that contains common REST resource methods. All concrete REST resource classes extend this class.
- **RestUtils:** A class that contains common REST utilities.
- **IDataService:** An interface that defines the minimum required methods, which are create, get, update, and delete, and the possible exception.
- **DataServiceImpl:** An abstract class that implements the `IDataService` interface. All interface methods are implemented as throwing an exception. All concrete data service implementations extend this class and override the necessary methods.
- **IData:** A marker interface that defines all POJOs that are used in the data service.
- **DataImpl:** An abstract class that implements the `IData` interface. It defines the common REST attributes, which are `id`, `lastUpdateDate`, and `messages`. All concrete POJO implementations extend this class.

2 About service

The about service provides access to the IBM Intelligent Operations Center software inventory tags. The inventory tags provide detailed information about the software products and fixes that are installed.

2.1 Base URI

`/ibm/ioc/api/about-service`

2.2 Software tags resource

Use the software tags resource to get the list of software tags. Software tags contain information about the installed software products.

2.2.1 Data service class

`com.ibm.ioc.about.SwtagDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for details about this data service class.

2.2.2 Resource URI

`/ibm/ioc/api/about-service/swtags`

2.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

2.2.4 GET method

Use the GET method to get the list of software tags.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|------------------|---------|---------------------------------------------------|
| productName | String | Product name |
| productVersions | String | Product version |
| swgfmidx | String | Unique identifier for this release of the product |
| productReleaseId | String | Product release ID number |
| ocCode | String | Optional offering classification or taxonomy code |
| buildDate | String | Software build date |
| buildLevel | Integer | Software build level |

Sample response content

```
[{
  "productName": "IBM Business Monitor",
  "productVersion": "8.0.1",
  "swgfmidx": "HWSBMT801",
  "productReleaseId": "\t21405af61a7540eca8b7335d4d7411d7",
  "ocCode": "SS7NQD",
  "buildDate": null,
  "buildLevel": null
},
{
  "productName": "IBM WebSphere Portal Server",
  "productVersion": "8.0.0",
  "swgfmidx": "HIWPSE800",
  "productReleaseId": "7c0691e1507745c6b64261215fc0b961",
  "ocCode": "SSB27T",
  "buildDate": null,
  "buildLevel": null
},
{
  "productName": "WebSphere Application Server Network Deployment",
  "productVersion": "8.0.0",
  "swgfmidx": "HWASND800",
  "productReleaseId": null,
  "ocCode": "SSAW57",
  "buildDate": null,
  "buildLevel": null
}
```

```
} ]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

2.3 Component tags resource

Use the cmptags resource to get the list of component tags. Component tags contain additional information about the installed software.

2.3.1 Data service class

```
com.ibm.ioc.about.CmptagDataService
```

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

2.3.2 Resource URI

```
/ibm/ioc/api/about-service/cmptags
```

2.3.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

2.3.4 GET method

```
gggg
```

Use the GET method to get the list of component tags.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|------------------|--------|---------------------------------------------------|
| componentName | String | Product name |
| componentVersion | String | Product version |
| Swgfmidx | String | Unique identifier for this release of the product |
| buildDate | String | Software build date |
| buildLevel | String | Software build level |

Sample response content

```
[{
  "componentName": "IBM Java(TM) SE Runtime Environment 64bit",
  "componentVersion": "1.6.0",
  "swgfmidx": null,
  "buildDate": null,
  "buildLevel": null
},
{
  "componentName": "WebSphere Central Install Manager",
  "componentVersion": "7.0",
  "swgfmidx": null,
  "buildDate": null,
  "buildLevel": null
},
{
  "componentName": "WebSphere Web 2.0 and Mobile Feature Pack",
  "componentVersion": "7.0",
  "swgfmidx": null,
  "buildDate": null,
  "buildLevel": null
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty. |
| 401 | Unauthorized | Not authorized to get the resource. |
| 500 | Internal server error | An error occurred while the request was being processed. |

2.4 Fix tags resource

Use the fxtags resource to get the list of fix tags. Fix tags contain information about fixes that have been applied to the installed software.

2.4.1 Data service class

`com.ibm.ioc.about.CmptagDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

2.4.2 Resource URI

/ibm/ioc/api/about-service/fxtags

2.4.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

2.4.4 GET method

Use the GET method to get the list of fix tags.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|------------|---------|----------------------------------------------------------------------------------------|
| fixType | String | Fix type (e.g. fix pack) |
| fixName | String | Fix name |
| fixVersion | String | Fix version, for example, APAR number |
| fixId | String | Unique identifier for the fix, must match the ID in Fix Central if Fix Central is used |
| swgfmidx | Integer | ID of the product or component that the fix applies to |
| buildDate | String | Fix software build date |
| buildLevel | String | Software build level |

Sample response content

```
[{
  "fixType": "Fix Pack",
  "fixName": "IBM Java(TM) SE Runtime Environment 64bit v1.6.0 Fix
Pack 6",
  "fixVersion": "8.0.0.6",
  "fixId": "8.0.0-WS-WASSDK-FP00000006",
  "swgfmidx": "JIJSR6160",
  "buildDate": null,
  "buildLevel": null
},
{
  "fixType": "Fix Pack",
  "fixName": "IBM WebSphere Portal Enable v8.0.0 Fix Pack 1",
  "fixVersion": "8.0.0.1",
  "fixId": "WP-Enable-8.0.0-Multi-fixpack-1",
  "swgfmidx": "HIWPEN800",
  "buildDate": null,
```

```
"buildLevel": null  
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty. |
| 401 | Unauthorized | Not authorized to get the resource. |
| 500 | Internal server error | An error occurred while the request was being processed. |

3 Authorization service

Use the authorization service to get, create, update, and delete resource authorizations. An authorization includes the ID of the resource that the authorization is for, the type that the authorization is for, the identity of the user or group that is authorized to access the resource, and whether or not the identity has write access to the resource. IBM Intelligent Operation Center components use the authorization service to either restrict or grant access to application resources.

3.1 Base URI

/ibm/ioc/api/authorization-service

3.2 Authorizations resource

Use the authorizations service to get, create, update, and delete resource authorizations.

3.2.1 Data service class

com.ibm.ioc.authorization.AuthorizationDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class

3.2.2 Resource URI

/ibm/ioc/api/authorization-service/authorizations

3.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

3.2.4 GET method

Use the GET method to get one or more authorization resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------------|---------|-------------------------------------------------------------|
| locale | String | Language locale |
| identity | String | Identity of the user or group that the authorization is for |
| identityType | String | Identity type (U = user, G = group) |
| resourceId | Integer | Resource ID that the authorization is for |
| resourceType | String | Resource type, for example, datasource |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| identity | String | Identity of the user or group that the authorization is for |
| identityType | String | Identity type (U = user, G = group) |
| resourceId | Integer | Resource ID that the authorization is for |
| resourceType | String | Resource type, for example, datasource |
| writeAccess | Boolean | Values <code>true</code> or <code>false</code> indicate whether the identity has write access to the resource that the authorization is for |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "id": 57,
  "resource_id": 1,
  "resource_type": "datasource",
  "identity": "wpsadmin",
  "identity_type": "U",
  "write_access": true,
  "lastUpdateDate": 1374196566062,
  "messages": []
},
{
  "id": 58,
```

```
"resource_id": 1,  
"resource_type": "datasource",  
"identity": "CityWideSupervisor",  
"identity_type": "G",  
"write_access": true,  
"lastUpdateDate": 1374196766282,  
"messages": []  
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty. |
| 401 | Unauthorized | Not authorized to get the resource. |
| 404 | Not found | The resource to be updated cannot be found. |
| 500 | Internal server error | An error occurred while the request was being processed. |

3.2.5 POST method

Use the POST method to create a resource authorization.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|--------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| resourceId | Integer | Resource ID the authorization is for |
| resourceType | String | Resource type for example, datasource |
| identity | String | Identity (user or group) the authorization is for |
| identityType | String | Identity type, valid values are <code>U</code> for user and <code>G</code> for group |
| writeAccess | Boolean | The values <code>true</code> or <code>false</code> indicate whether or not the identify has write access to the resource that the authorization is for. |

Sample POST request content

```
{  
  "resourceId": 200,  
  "resourceType": "owning-org",  
  "identity": "CityWideExecutive",  
  "identityType": "G",  
  "writeAccess": true  
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters or is missing parameters and inputs |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by that resource |
| 500 | Internal server error | An error occurred while the request was being processed |

3.2.6 PUT method

Use the PUT method to update a resource authorization.

Path parameters

| Name | Type | Description |
|------|---------|----------------------------------|
| id | Integer | The ID of the resource to update |

Request content

MIME type: application/json.

Parameters:

| Name | Type | Description |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| resourceId | Integer | Resource ID the authorization is for |
| resourceType | String | Resource type, for example, datasource |
| identity | String | Identity (user or group) the authorization is for |
| identityType | String | Identity type, valid values are <code>U</code> for user and <code>G</code> for group |
| writeAccess | Boolean | The values <code>true</code> or <code>false</code> indicate whether or not the identity has write access to the resource that the authorization is for |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |

Sample PUT request content

```
{
  "resourceId": 200,
  "resourceType": "owning-org",
  "identity": "CityWideExecutive",
  "identityType": "G",
  "writeAccess": false,
  "id": 167,
  "lastUpdateDate": 1381526188835
}
```

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request contains invalid parameters, or is missing parameters and inputs |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by that resource |
| 500 | Internal server error | An error occurred while the request was being processed. |

3.2.7 DELETE method

Use the DELETE method to delete a resource authorization.

Path Parameters

| Name | Type | Description |
|------|---------|-----------------------------------|
| id | Integer | The iID of the resource to delete |

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed. |

4 Data injection service

Use the data injection service to add, update and cancel data items for a data source. The data injection service uses a data source configuration to construct the request content and URI path elements that are required to add, update, and cancel data items for a data source.

4.1 Base URI

/ibm/ioc/api/data-injection-service

4.2 Data items resource

Use the data items resource to add, update, and cancel data items for a data source.

4.2.1 Data service class

com.ibm.ioc.datainjection.DataInjectionService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

4.2.2 Resource URI

/ibm/ioc/api/data-injection-service/datablocks/{data source id}/dataitems

Path parameters

| Name | Type | Description |
|----------------|---------|----------------------------------------------------------------|
| data source id | Integer | The ID of the data source that the data item is being added to |

4.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| POST | Yes | Yes |
| PUT | Yes | Yes |

| | | |
|--------|-----|-----|
| DELETE | Yes | Yes |
|--------|-----|-----|

4.2.4 POST method

Use the POST method to add a data item to a data source.

Request content

MIME type: application/json

Parameters:

| Common Properties | | |
|---------------------------------|---------|---------------------------------------------------------------------------------|
| Name | Type | Description |
| NAME | String | Record name |
| STARTDATETIME | String | Start date time in ISO 8601 format |
| ENDDATETIME | String | End date time ISO 8601 format |
| LOCATION | String | The geospatial location of the data item in well-known text (WKT) format |
| TIMEZONEOFFSET | String | Time zone offset in the ISO 8601 format. If omitted, the offset is set to 0. |
| | | |
| Data Source Specific Properties | | |
| Name | Type | Description |
| Property_1 | String | In the following example, Property_1 is mapped to the source column ADDRESS |
| Property_2 | Integer | In the following example, Property_2 is mapped to the source column DESCRIPTION |

Sample POST request content

```
{
  "NAME": "Record Five",
  "STARTDATETIME": "2013-07-21T21:30:00-04:00",
  "ENDDATETIME": "2013-07-21T21:30:00-04:00",
  "LOCATION": "Point(-93.26774597168402 45.02877031147919)",
  "TIMEZONEOFFSET": "-04:00",
  "Property_1": "505 East 9th Street",
  "Property_2": "Record five description"
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

4.2.5 PUT method

Use the PUT method to update a data source data item.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

Parameters:

| Common Properties | | |
|---------------------------------|---------|---------------------------------------------------------------------------------|
| Name | Type | Description |
| NAME | String | Record name |
| STARTDATETIME | String | Start date time in ISO 8601 format |
| ENDDATETIME | String | End date time ISO 8601 format |
| LOCATION | String | The geospatial location of the data item in well-known text (WKT) format |
| TIMEZONEOFFSET | String | Time zone offset in the ISO 8601 format. If omitted, the offset is set to 0. |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| | | |
| Data Source Specific Properties | | |
| Name | Type | Description |
| Property_1 | String | In the following example, Property_1 is mapped to the source column ADDRESS |
| Property_2 | Integer | In the following example, Property_2 is mapped to the source column DESCRIPTION |

Response content

MIME type: application/json.

Sample PUT request content

```
{
  "DATASOURCEID": 32,
  "PROPERTY_1": "303 East 9th Street",
  "PROPERTY_2": "Record five description",
  "NAME": "Record Five",
  "TIMEZONEOFFSET": "-04:00",
  "lastUpdateTime": 1381541046929,
  "LOCATION": "Point(-93.26774597168402 45.02877031147919)",
  "ENDDATETIME": "2013-07-21T21:30:00-04:00",
  "OBJECTID": 2366,
  "LASTUPDATEDATETIME": "2013-10-11T17:24:06-04:00",
  "id": 2366,
  "STARTDATETIME": "2013-07-21T21:30:00-04:00",
  "ASSESSMENTDATETIME": "2013-07-21T21:30:00-04:00"
}
```

If the PUT request is successful, the updated resource is returned in the response. See the GET method for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

4.2.6 DELETE method

Use the DELETE method to cancel a data item for a data source. The DELETE method sets the delete flag property to `true`, which prevents the data item from being displayed by the user interface components.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

5 Data receiver service

Use the data source service to get, create, update and delete data receivers. Data receivers are responsible for ingesting data from external sources such as tables and csv files, and for applying routing expressions to the data items that are processed from the external sources.

5.1 Base URI

/ibm/ioc/api/data-receiver-service

5.2 Data receivers resource

Use the data receivers resource is used to get, create, update and delete data receivers.

5.2.1 Data service class

com.ibm.ioc.datareceiver.DataReceiverService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

5.2.2 Resource URI

/ibm/ioc/api/data-receiver-service/datareceivers

5.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

5.2.4 GET method

Use the GET method to get a data receiver resource. The ID of the receiver is required on the GET request.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | | Type | Description |
|----------------|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | | Integer | Resource ID |
| target | | String | IOC target table |
| implementation | | String | Receiver implementation class <ul style="list-style-type: none">com.ibm.ioc.data.receiver.DataReceiverTablecom.ibm.ioc.data.receiver.DataReceiverCSV |
| expression | | String | AND or OR value that indicates whether all routing expressions must evaluate to <code>true</code> for the expressions to be processed |
| geometry | | String | Source data geometry type |
| source | | Array | Connection information that is required to access the external input data source |
| | port | Integer | Port |
| | interval | Integer | Polling interval in milliseconds |
| | filename | String | csv filename, or table name |
| | host | String | Host name |
| | protocol | String | Column parser class <ul style="list-style-type: none">com.ibm.ioc.datasource.ColumnParserDatabasecom.ibm.ioc.datasource.ColumnParserCsv |
| | password | String | Password |
| | user | String | User ID |
| | directory | String | File directory, or database name |
| | options | String | Database server |
| datasourceid | | Integer | Data source ID |
| lastUpdateDate | | Long | Timestamp that indicates when the resource was last updated |
| columns | | Array | The column attributes are a subset of those that are defined in the data source column definitions |
| | isId | Boolean | Indicates whether the property is an ID property |
| | sourceType | String | Source column data type |
| | updateable | Boolean | Indicates whether the property is updateable |
| | sourceName | String | Source column name, or source csv column number |
| | length | String | Target column length |
| | hint | String | Source column name |
| | type | String | Target column data type |
| | scale | String | The number of decimal points for a decimal property |
| | targetName | String | Target column name |
| | category | String | Property type, valid values are either <code>MINIMAL</code> , <code>KEY</code> , or <code>FULL</code> |

Sample response content

```
{
  "expression": "AND",
  "geometry": "POINT",
  "source": {
    "port": 50002,
    "interval": 0,
    "filename": "SAMPLE.SAMPLE_DATASOURCE",
    "host": "sample.host.com",
    "protocol": "com.ibm.ioc.datasources.ColumnParserDatabase",
    "password": "",
    "user": "db2inst2",
    "directory": "SAMPLE",
    "options": "DB2"
  },
  "datasourceid": 32,
  "lastUpdateDate": 1381421789937,
  "columns": [{
    "isId": false,
    "sourceType": "VARCHAR",
    "updatable": true,
    "sourceName": "ADDRESS",
    "length": "50",
    "hint": "ADDRESS",
    "type": "VARCHAR",
    "scale": "0",
    "targetName": "Property_1",
    "category": "FULL"
  },
  {
    "isId": false,
    "sourceType": "VARCHAR",
    "updatable": true,
    "sourceName": "DESCRIPTION",
    "length": "50",
    "hint": "DESCRIPTION",
    "type": "VARCHAR",
    "scale": "0",
    "targetName": "Property_2",
    "category": "KEY"
  },
  {
    "isId": false,
    "sourceType": "TIMESTAMP",
    "updatable": true,
    "sourceName": "ENDDATETIME",
    "length": "26",
    "format": "TIMESTAMP",
    "hint": "ENDDATETIME",
    "type": "TIMESTAMP",
    "scale": "6",
    "targetName": "END_DATE_TIME",
    "category": "MINIMAL"
  },
  {
    "isId": false,
```

```
    "sourceType": "INTEGER",
    "updatable": true,
    "sourceName": "ID",
    "length": "10",
    "hint": "ID",
    "type": "INTEGER",
    "scale": "0",
    "targetName": "Property_3",
    "category": "FULL"
  },
  {
    "isId": false,
    "sourceType": "TIMESTAMP",
    "updatable": true,
    "sourceName": "LASTUPDATEDATETIME",
    "length": "26",
    "format": "TIMESTAMP",
    "hint": "LASTUPDATEDATETIME",
    "type": "TIMESTAMP",
    "scale": "6",
    "targetName": "LAST_UPDATE_DATE_TIME",
    "category": "MINIMAL"
  },
  {
    "lookupFilename": null,
    "isId": false,
    "length": "50",
    "sourceName": "LOCATION",
    "hint": "LOCATION",
    "scale": "0",
    "lookupDirectory": null,
    "sourceType": "VARCHAR",
    "updatable": true,
    "format": "SHAPE",
    "type": "VARCHAR",
    "targetName": "LOCATION",
    "category": "MINIMAL"
  },
  {
    "isId": false,
    "sourceType": "VARCHAR",
    "updatable": true,
    "sourceName": "NAME",
    "length": "30",
    "format": "STRING",
    "hint": "NAME",
    "type": "VARCHAR",
    "scale": "0",
    "targetName": "NAME",
    "category": "MINIMAL"
  },
  {
    "isId": false,
    "sourceType": "TIMESTAMP",
    "updatable": true,
    "sourceName": "STARTDATETIME",
    "length": "26",
```

```
        "format": "TIMESTAMP",
        "hint": "STARTDATETIME",
        "type": "TIMESTAMP",
        "scale": "6",
        "targetName": "START_DATE_TIME",
        "category": "MINIMAL"
    },
    {
        "isId": false,
        "sourceType": "INTEGER",
        "updatable": true,
        "sourceName": "TIMEZONEOFFSET",
        "length": "10",
        "format": "INTEGER",
        "hint": "TIMEZONEOFFSET",
        "type": "INTEGER",
        "scale": "0",
        "targetName": "TIMEZONE_OFFSET",
        "category": "MINIMAL"
    }
],
"target": "IOC.TARGET_TABLE_32",
"implementation":
"com.ibm.ioc.datareceiver.types.DataReceiverTable",
"id": 32
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------|
| 200 | OK | Successful completion, requested data returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

5.2.5 POST method

Use the POST method to create a data receiver resource.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or is missing parameters and inputs |
| 401 | Unauthorized | Not authorized to create the resource |
| 405 | Method not allowed | A request was made of the resource using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

5.2.6 PUT method

Use the PUT method to update a data receiver resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|----------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or is missing parameters and inputs |
| 401 | Unauthorized | Not authorized to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the lastUpdateDate value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

5.2.7 DELETE method

Use the DELETE method to delete a data receiver resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description |
|------|----------------------------------------------------------------------------------|
| 204 | No content Returned when a resource is successfully deleted |
| 401 | Unauthorized Not authorized to delete the resource |
| 404 | Not found The resource to be deleted cannot be found |
| 500 | Internal server error An error occurred while the request was being processed |

6 Data source service

Use the data source service to get, create, update, and delete data sources. Data sources are used to define the properties of the source data that is brought into IBM Intelligent Operations Center.

6.1 Base URI

/ibm/ioc/api/datasource-service

6.2 Data source resource

Use the data source resource to get, create, update, and delete data sources.

6.2.1 Data service class

com.ibm.ioc.datasource.DataSourceDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

6.2.2 Resource URI

/ibm/ioc/api/datasource-service/datasources

6.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

Properties

| Name | Type | Description |
|-----------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| lastUpdateDate | Long | Timestamp that indicates when the resource was last updated |
| messages | String array | List of messages that are optionally returned by the service |
| type | String | Data source type, valid values are Database, CSV |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| description | String | Group and key reference for the translation REST service |
| i18nDescription | String | Locale translated user interface label for the column description generated by the server |
| receiver | Object | See the following receiver properties table |
| source | Object | See the following source properties table |
| columns | Object array | See the following column properties table |
| geometry | String | Geometry format, valid values are POINT, MULTIPOINT, LINESTRING, MULTILINESTRING, POLYGON, MULTIPOLYGON |
| dateFormat | String | Format expression for parsing string representation of date |
| timeFormat | String | Format expression for parsing string representation of time |
| routingLogic | String | To import a data item, either all ingestion routing expressions must be true (AND), or only one ingestion routing expression must be true (OR) |
| styleLogic | String | To apply a style, either all style expressions must be true (AND), or only one style expression must be true (OR) |
| archive | Integer | The number of months for archiving data for the associated target table |
| table | String | Target table name |
| view | String | Target view name |
| service | String | External service URL to use instead of a data receiver |
| rules | Object array | See the following rules properties table |
| icon | String | Data source icon |
| styles | Object array | See the following styles properties table |
| extensions | Object array | See the following extensions properties table |

Receiver properties

| Name | Type | Description |
|----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------|
| id | Integer | Data receiver resource ID |
| type | String | Data receiver class name, for example, <code>com.ibm.ioc.data.source.receiver.DataReceiverTable</code> |
| interval | Long | Data receiver polling interval. If the value is set to 0 with any unit value, the data receiver polls for data only once when it is created |
| unit | String | Unit in which polling interval is defined, valid values are <code>MINUTES</code> , <code>HOURS</code> , or <code>DAYS</code> |

Source properties

| Name | Type | Description |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------|
| protocol | String | Column parser class to load on the server, for example, <code>com.ibm.ioc.datasources.ColumnParserDatabase</code> |
| options | String | Options flags that are needed by the given protocol class, for example, <code>DB2</code> for <code>ColumnParserDatabase</code> |
| host | String | Remote server host name or IP address |
| port | Integer | Remote server port number |
| user | String | User ID for remote connection |
| password | String | Password for remote connection |
| directory | String | Remote directory or database name |
| filename | String | Remote file or database table name |

Column properties

| Name | Type | Description |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type | String | The data type the source column is mapped to in the target database, where valid values are <code>VARCHAR</code> , <code>INTEGER</code> , <code>BIGINT</code> , <code>DOUBLE</code> , <code>DECIMAL</code> , <code>TIME</code> , <code>DATE</code> , <code>TIMESTAMP</code> |
| sourceType | String | The data type of the source column |
| sourceName | String | A column name in the source database table, or a column index in a CSV file |
| targetNames | Array | Column names to be used in the IBM Intelligent Operations Center target table. IBM Intelligent Operations Center reserves the following target names for use with the minimal properties: <code>STARTDATETIME</code> , <code>ENDDATETIME</code> , <code>LASTUPDATEDATETIME</code> , <code>ASSESSMENTDATETIME</code> , <code>TIMEZONEOFFSET</code> , <code>NAME</code> , and <code>LOCATION</code> . If the value of category is <code>MINIMAL</code> , then <code>targetNames</code> might contain more than one value, for example, <code>[STARTDATETIME, LASTUPDATEDATETIME, ASSESSMENTDATETIME]</code> . If the value of category is either <code>KEY</code> , or <code>FULL</code> , the value of <code>targetNames</code> is generated by the server and there is only one element in the array |
| hint | String | Source column name or CSV header row value that is not translated |

| | | |
|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| category | String | Column category., where valid values are either <code>MINIMAL</code> , <code>KEY</code> , or <code>FULL</code> |
| format | String | Format of the data source, where valid values are <code>LAT_LON</code> , <code>SHAPE</code> , <code>TIMESTAMP</code> , <code>STRING</code> , <code>INTEGER</code>) |
| lookup | Object | See the following lookup properties table |
| values | String array | Set of allowed values for the column |
| length | String | The target column length |
| scale | String | The number of decimal places for a decimal property |
| enumerated | Boolean | If the value is <code>true</code> , the list of unique values for this property is generated at run time for additional filtering on the filter panel |
| isId | Boolean | If the value is <code>true</code> , the property is a unique key, and the value of <code>updatable</code> must be set to <code>false</code> |
| optimize | Boolean | If the value is <code>true</code> , an index is generated for the property |
| updatable | Boolean | If the value is <code>true</code> , the property can be updated |
| metric | Boolean | If the value is <code>true</code> , the property is used for metrics |
| chart | Boolean | This column can be used in distribution charts |

Lookup properties

| Name | Type | Description |
|-----------|--------|-----------------------------------------------------------------------------------------------------|
| directory | String | Database table name, with schema prefix, for a shape value that is contained in another data source |
| filename | String | Column name for the remote shape value |

Styles properties

| Name | Type | Description |
|-----------|--------|--------------------------------------------------------------------|
| name | String | Unique style definition name that cannot be translated |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label, generated by the server |
| type | String | Valid values are either <code>COLOR</code> or <code>GRAPHIC</code> |
| line | String | Line color |
| value | String | Fill color |
| scope | String | Valid values are <code>DATASOURCE</code> or <code>PROPERTY</code> |

Rules properties

| Name | Type | Description |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type | String | Rule type, valid values are either ROUTING, APPEARANCE, or CUSTOM |
| property | String | Column source name to apply the rule to |
| operation | String | The value to evaluate against, where valid values are EQUAL_TO, NOT_EQUAL_TO, GREATER_THAN, LESS_THAN, GREATER_THAN_OR_EQUAL_TO, LESS_THAN_OR_EQUAL_TO, RANGE_INCLUSIVE, RANGE_EXCLUSIVE |
| criteria | String | Value to compare against |
| target | String | Target to route the rule to, reserved targets are IOC, KPI, SOP, and INTEGRATION_TOPIC |
| subTarget | String | A specific instance of the target to run, for example, the name of the SOP to trigger |

Extension properties

| Name | Type | Description |
|--------------|---------|-------------------------------------------------------------------------------------|
| name | String | Extension name |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| type | String | Extension type, where valid values are ACTION, VIEW, or CUSTOM |
| disabled | Boolean | Do not enable the extension for this data source |
| multiple | Boolean | This extension can impact multiple data items |
| pathLocation | String | Extension path |
| pathName | String | Extension path name |
| module | String | Extension module |
| associated | String | Associated view module or custom property value |
| service | String | Service URL |

6.2.4 GET method

Use the GET method to get one or more data source resources.

Path parameters

| Name | Type | Description |
|------|---------|----------------------------------|
| id | Integer | The ID of the data source to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json. For a complete list of the properties that are returned in the response, see the previous property descriptions.

Sample response content

```
[{
  "id": 32,
  "lastUpdateDate": 1381435109810,
  "messages": [],
  "type": "Database",
  "label": "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_3a984150-1ae8-4209-8be2-27d4b599be09\\"}",
  "i18nLabel": "Sample Data Source",
  "description":
    "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_04bfac7a-f7e5-4aad-8d50-0ff54b44f06d\\"}",
  "i18nDescription": "",
  "receiver": {
    "id": 32,
    "type": "com.ibm.ioc.datareceiver.types.DataReceiverTable",
    "interval": 0,
    "unit": "MINUTES"
  },
  "source": {
    "protocol": "com.ibm.ioc.datasources.ColumnParserDatabase",
    "options": "DB2",
    "host": "ioc2bvt2db.rtp.raleigh.ibm.com",
    "port": 50002,
    "user": "db2inst2",
    "directory": "SAMPLE",
    "filename": "SAMPLE.SAMPLE_DATASOURCE"
  },
  "columns": [{
    "type": "VARCHAR",
    "sourceType": "VARCHAR",
    "sourceName": "ADDRESS",
    "targetNames": ["Property_1"],
    "hint": "ADDRESS",
    "label":
      "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_70f387a6-0214-4030-8b29-b67650c51919\\"}",
    "i18nLabel": "Address",
    "category": "FULL",
    "length": "50",
    "scale": "0",
    "enumerated": false,
    "isId": false,
    "optimize": false,
    "updatable": true,
    "metric": false,
    "chart": false
  }],
  {
    "type": "VARCHAR",
    "sourceType": "VARCHAR",
```

```
        "sourceName": "DESCRIPTION",
        "targetNames": ["Property_2"],
        "hint": "DESCRIPTION",
        "label":
"#{@group\": \"DataSourceI18n\", \"key\": \"i18n_196cdcb5-8ddb-4af6-88ff-19b49d6aca08\"}",
        "i18nLabel": "Description",
        "category": "KEY",
        "length": "50",
        "scale": "0",
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    },
    {
        "type": "TIMESTAMP",
        "sourceType": "TIMESTAMP",
        "sourceName": "ENDDATETIME",
        "targetNames": ["END_DATE_TIME"],
        "hint": "ENDDATETIME",
        "label":
"#{@group\": \"DataSourceI18n\", \"key\": \"i18n_452807bc-c2ae-4bbc-8edd-dbd01fc96cc7\"}",
        "i18nLabel": "ENDDATETIME",
        "category": "MINIMAL",
        "format": "TIMESTAMP",
        "length": "26",
        "scale": "6",
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    },
    {
        "type": "INTEGER",
        "sourceType": "INTEGER",
        "sourceName": "ID",
        "targetNames": ["Property_3"],
        "hint": "ID",
        "label":
"#{@group\": \"DataSourceI18n\", \"key\": \"i18n_0b30d034-774c-44f8-831b-da5efad7852a\"}",
        "i18nLabel": "ID",
        "category": "FULL",
        "length": "10",
        "scale": "0",
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    }
```

```
    },
    {
      "type": "TIMESTAMP",
      "sourceType": "TIMESTAMP",
      "sourceName": "LASTUPDATEDATETIME",
      "targetNames": ["LAST_UPDATE_DATE_TIME"],
      "hint": "LASTUPDATEDATETIME",
      "label":
        "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_b39146f0-019d-44f9-8120-8edd7de9954f\\"}",
      "i18nLabel": "LASTUPDATEDATETIME",
      "category": "MINIMAL",
      "format": "TIMESTAMP",
      "length": "26",
      "scale": "6",
      "enumerated": false,
      "isId": false,
      "optimize": false,
      "updatable": true,
      "metric": false,
      "chart": false
    },
    {
      "type": "VARCHAR",
      "sourceType": "VARCHAR",
      "sourceName": "LOCATION",
      "targetNames": ["LOCATION"],
      "hint": "LOCATION",
      "label":
        "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_0000f5bd-de6e-44c6-8fd7-404dcf67cf66\\"}",
      "i18nLabel": "LOCATION",
      "category": "MINIMAL",
      "format": "SHAPE",
      "length": "50",
      "scale": "0",
      "enumerated": false,
      "isId": false,
      "optimize": false,
      "updatable": true,
      "metric": false,
      "chart": false
    },
    {
      "type": "VARCHAR",
      "sourceType": "VARCHAR",
      "sourceName": "NAME",
      "targetNames": ["NAME"],
      "hint": "NAME",
      "label":
        "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_4d680fbd-901b-491a-8a35-33b5c9b7c447\\"}",
      "i18nLabel": "Name",
      "category": "MINIMAL",
      "format": "STRING",
      "length": "30",
      "scale": "0",
```

```
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    },
    {
        "type": "TIMESTAMP",
        "sourceType": "TIMESTAMP",
        "sourceName": "STARTDATETIME",
        "targetNames": ["START_DATE_TIME"],
        "hint": "STARTDATETIME",
        "label":
        "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_f136a1fc-4f38-414f-8cd3-
        da35555a14c1\\"}",
        "i18nLabel": "STARTDATETIME",
        "category": "MINIMAL",
        "format": "TIMESTAMP",
        "length": "26",
        "scale": "6",
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    },
    {
        "type": "INTEGER",
        "sourceType": "INTEGER",
        "sourceName": "TIMEZONEOFFSET",
        "targetNames": ["TIMEZONE_OFFSET"],
        "hint": "TIMEZONEOFFSET",
        "label":
        "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_758fc1da-6821-48bb-8b9f-
        0325cb3c20b9\\"}",
        "i18nLabel": "TIMEZONEOFFSET",
        "category": "MINIMAL",
        "format": "INTEGER",
        "length": "10",
        "scale": "0",
        "enumerated": false,
        "isId": false,
        "optimize": false,
        "updatable": true,
        "metric": false,
        "chart": false
    }
  ],
  "geometry": "POINT",
  "routingLogic": "AND",
  "styleLogic": "AND",
  "archive": 1,
  "table": "IOC.TARGET_TABLE_32",
  "view": "IOC.TARGET_VIEW_32",
  "icon": "closure.png",
  "extensions": [{
```

```
    "name": "Cancel",
    "type": "ACTION",
    "disabled": false,
    "multiple": false,
    "pathLocation": "/ibm/ioc/theme/static/js/js",
    "pathName": "ioc",
    "module": "ioc/com/ibm/ioc/moreactions/Cancel"
  },
  {
    "name": "CancelMultiple",
    "type": "ACTION",
    "disabled": false,
    "multiple": true,
    "pathLocation": "/ibm/ioc/theme/static/js/js",
    "pathName": "ioc",
    "module": "ioc/com/ibm/ioc/moreactions/CancelMultiple"
  },
  {
    "name": "Update",
    "type": "ACTION",
    "disabled": false,
    "multiple": false,
    "pathLocation": "/ibm/ioc/theme/static/js/js",
    "pathName": "ioc",
    "module": "ioc/com/ibm/ioc/moreactions/Edit"
  },
  {
    "name": "ViewSop",
    "type": "ACTION",
    "disabled": false,
    "multiple": false,
    "pathLocation": "/ibm/ioc/theme/static/js/js",
    "pathName": "ioc",
    "module": "ioc/com/ibm/ioc/moreactions/ViewSops"
  },
  {
    "name": "category",
    "type": "CUSTOM",
    "disabled": false,
    "multiple": false,
    "module": "ICPO",
    "associated": "1"
  },
  {
    "name": "dimension",
    "type": "CUSTOM",
    "disabled": false,
    "multiple": false,
    "module": "ICPO",
    "associated": "false"
  },
  {
    "name": "name",
    "type": "CUSTOM",
    "disabled": false,
    "multiple": false,
    "module": "ICPO",
```

```
        "associated": "Sample Data Source"
      },
      {
        "name": "resource",
        "type": "CUSTOM",
        "disabled": false,
        "multiple": false,
        "module": "ICPO",
        "associated": "false"
      }
    ]
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

6.2.5 POST method

Use the POST method to create a data source.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

6.2.6 PUT method

Use the PUT method to update a data source.

Path parameters

| Name | Type | Description |
|------|---------|-----------------------------------------|
| id | Integer | The ID of the data source to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

6.2.7 DELETE method

Use the DELETE to delete a data source.

Path parameters

| Name | Type | Description |
|------|---------|-----------------------------------------|
| id | Integer | The ID of the data source to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7 Filter service

Use the filter service to get, create, update and delete resources that are used to configure the filter panel. The filter panel is used to filter the data source data items that are displayed on the map, location map, list and charts.

7.1 Base URI

/ibm/ioc/api/filter-service

7.2 Data sources resource

Use the data sources resource to return a list of data sources that are assigned to filter panes for the authorized user that is passed in the request.

7.2.1 Data service class

com.ibm.ioc.filter.DataSourceDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

7.2.2 Resource URI

/ibm/ioc/api/filter-service/datasources

7.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

7.2.4 GET method

Use the GET method to get a list of data sources that are assigned to filter panes for the authorized user that is passed in the request.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| panelId | Integer | Pane ID |
| dataSourceId | Integer | ID of the data source that is assigned to the pane |
| ordinal | Integer | The ordinal value defines the position in which a filter pane is displayed in the filter panel user interface, where a pane with ordinal value 0 is displayed at the top |
| label | String | Default translated data source label |
| i18nLabel | String | Not used |
| moreValues | Array | |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "panelId": 49,
  "dataSourceId": 32,
  "ordinal": 0,
  "label": "Sample Data Source",
  "i18nLabel": null,
  "moreValues": [],
  "id": 36,
  "lastUpdateDate": null,
  "messages": []
},
{
  "panelId": 24,
  "dataSourceId": 3,
  "ordinal": 0,
  "label": "Police 911 Calls",
  "i18nLabel": null,
  "moreValues": [],
  "id": 5,
  "lastUpdateDate": null,
```

```
"messages": []  
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

7.3 Holidays resource

Use the holidays resource to get, create, update, and delete holidays. You can select holidays to provide additional filtering in the **Date & Time** pane in the filter panel.

7.3.1 Data service class

com.ibm.ioc.filter.HolidayDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

7.3.2 Resource URI

/ibm/ioc/api/filter-service/holidays

7.3.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

7.3.4 GET method

Use the GET to get one or more holiday resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| every | Integer | Month the holiday occurs in |
| number | Integer | If the value of <code>unit</code> is set to <code>Date</code> , the value of <code>number</code> represents the specific day of the month that the holiday occurs on If the value of <code>unit</code> is set to a day of the week, the value of <code>number</code> represents the occurrence of that day in the month. For example, if <code>number</code> = 3 and <code>unit</code> = 5 (Thursday), the holiday occurs on the 3 rd Thursday of the month. |
| unit | Integer array | Sunday = 1 Monday = 2 Tuesday = 3 Wednesday = 4 Thursday = 5 Friday = 6 Saturday = 7 Date = 8 |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "label": "{\"group\":\"FilterPanel\",\"key\":\"i18n_34a23104-54b1-49b6-8dfe-374c20b7fbda\"}",
  "i18nLabel": "Thanksgiving",
  "every": 11,
  "number": 28,
  "unit": [5],
  "id": 1,
  "lastUpdateDate": 1373767076241,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

7.3.5 POST method

Use the POST method to create a holiday resource.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.3.6 PUT method

Use the PUT method to update a holiday resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.3.7 DELETE method

Use the DELETE method to delete a holiday resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.4 Panels resource

Use the panels resource to get, create, update, and delete the filter panels that define the filter panes in the filter panel in the user interface.

Each filter panel object includes the data sources that are defined on the corresponding filter pane. Each data source is validated to ensure that the data source exists. Data sources that do not exist are not returned in any response. If the authorized user does not have access to a data source that is assigned to a pane, the data source is not returned in the results.

7.4.1 Data service class

`com.ibm.ioc.filter.PanelDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

7.4.2 Resource URI

`/ibm/ioc/api/filter-service/panels`

7.4.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

7.4.4 GET method

Use the GET method to get one or more panel resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | | Type | Description |
|----------------|--------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | | Integer | Resource ID |
| label | | String | Group and key reference for the translation REST service |
| i18nLabel | | String | Locale translated user interface label for the property name |
| color | | String | Pane color, which is set to the nearest color in the set of colors on the standard 7 x 10 color palette |
| ordinal | | Integer | The ordinal value defines the position in which a filter pane is displayed in the filter panel user interface, where a pane with ordinal value 0 is displayed at the top |
| widget | | String | Internal use only value that defines the predefined filter panes |
| datasources | | Array | A list of data sources that are assigned to the filter pane |
| | panelId | Integer | Filter pane ID |
| | dataSourceId | Integer | ID of the data source that is assigned to the pane |
| | ordinal | Integer | Position of the data source in the pane, where a data source with ordinal value 0 is displayed at the top of the pane |
| | label | String | Group and key reference for the translation REST service |
| | i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| | moreValues | Array | List of data source properties whose <code>filter enumerated value</code> indicator is set to <code>true</code> . Each entry in the array contains the locale translated user interface label for the property, the target column name, and the enumerated filter values. |
| lastUpdateDate | | Long | Timestamp that indicates when the authorization was last updated |
| messages | | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "label":
  "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"savedFiltersPane_title\\"}",
  "i18nLabel": "Saved Filters",
  "color": "#000000",
  "ordinal": 0,
  "widget": "SavedFiltersPane",
  "dataSources": [],
  "id": 1,
  "lastUpdateDate": 1378752421815,
  "messages": []
},
{
  "label":
  "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"dateTimePane_title\\"}",
  "i18nLabel": "Date & Time",
  "color": "#000000",
  "ordinal": 1,
  "widget": "DateTimePane",
  "dataSources": [],
  "id": 2,
  "lastUpdateDate": 1378752421820,
  "messages": []
},
{
  "label":
  "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"locationPane_title\\"}",
  "i18nLabel": "Boundary",
  "color": "#000000",
  "ordinal": 2,
  "widget": "LocationPane",
  "dataSources": [],
  "id": 3,
  "lastUpdateDate": 1378752421823,
  "messages": []
},
{
  "label": "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"i18n_3db98de8-0211-42f7-8458-9f27d2dcf7d9\\"}",
  "i18nLabel": "Public Safety",
  "color": "#ff0000",
  "ordinal": 6,
  "widget": null,
  "dataSources": [{
    "panelId": 24,
    "dataSourceId": 3,
    "ordinal": 0,
    "label":
    "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_55e18d6b-63e2-47e4-8cbc-d064cbb857b9\\"}",
    "i18nLabel": "Police 911 Calls",
    "moreValues": [{
      "i18nLabel": "Call Disposition",
      "targetName": "Property_2",
      "values": ["ADV-Advised",
```

```
        "AOK-All OK",
        "AQT-All Quiet",
        "AST-Assist",
        "BKG-Booking",
        "CNL-Cancel",
        "FAL-False",
        "FTC-Fail to Clear",
        "GOA-Gone on Arrival",
        "INF-Information",
        "INS-Inservice",
        "MES-Message Left",
        "NOS-No Service",
        "RFD-Refused",
        "RPR-Reprimand/Release",
        "RPT-Report",
        "SCK-Sick",
        "SEC-Secured",
        "SNT-Sent",
        "TAG-Tagged",
        "TOW-Towed",
        "TRN-Transport",
        "UNF-Unfounded",
        "UTL-Unable to Locate"]
    }],
    "id": 5,
    "lastUpdateDate": null,
    "messages": []
  }],
  "id": 24,
  "lastUpdateDate": 1373642105908,
  "messages": []
},
{
  "label": "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"i18n_2cc16720-4750-4974-8e87-5f36b7ea55cd\\"}",
  "i18nLabel": "Sample Filter Pane",
  "color": "#ffff00",
  "ordinal": 3,
  "widget": null,
  "dataSources": [{
    "panelId": 49,
    "dataSourceId": 32,
    "ordinal": 0,
    "label": "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_3a984150-1ae8-4209-8be2-27d4b599be09\\"}",
    "i18nLabel": "Sample Data Source",
    "moreValues": [],
    "id": 36,
    "lastUpdateDate": null,
    "messages": []
  }],
  "id": 49,
  "lastUpdateDate": 1381421814101,
  "messages": []
},
{
```

```
    "label": "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"i18n_bbbfa55b-dab0-4a42-8f03-fd9b20243216\\"}",
    "i18nLabel": "Stadium",
    "color": "#4169e1",
    "ordinal": 4,
    "widget": null,
    "dataSources": [{
      "panelId": 50,
      "dataSourceId": 34,
      "ordinal": 0,
      "label":
    "{\\"group\\":\\"DataSourceI18n\\",\\"key\\":\\"i18n_ec6cbe23-2369-49a6-80a4-8823671af8ed\\"}",
      "i18nLabel": "Stadium Events",
      "moreValues": [],
      "id": 39,
      "lastUpdateDate": null,
      "messages": []
    }],
    "id": 50,
    "lastUpdateDate": 1381660558274,
    "messages": []
  }]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

7.4.5 POST method

Use the POST method to create a panel resource.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.4.6 PUT method

Use the PUT method to update a panel resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.4.7 DELETE method

Use the DELETE method to delete a panel resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description |
|------|----------------------------------------------------------------------------------|
| 204 | No content Returned when a resource is successfully deleted |
| 401 | Unauthorized Not authorized to delete the resource |
| 403 | Forbidden Not allowed to delete the resource |
| 500 | Internal server error An error occurred while the request was being processed |

7.5 Ranges resource

Use the ranges resource to get, create, update, and delete ranges. You can select ranges to provide additional filtering in the Date & Time pane in the filter panel.

7.5.1 Data service class

com.ibm.ioc.filter.RangeDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

7.5.2 Resource URI

/ibm/ioc/api/filter-service/ranges

7.5.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

7.5.4 GET method

Use the GET method to get one or more range resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|---------------|--------------------------------------------------------------------------------------------------------------------|
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the property name |
| fromDay | Integer array | Sunday = 1 Monday = 2 Tuesday = 3 Wednesday = 4 Thursday = 5 Friday = 6 Saturday = 7 Date = 8 |
| fromTime | String | Range start time |
| today | Integer array | Sunday = 1 Monday = 2 Tuesday = 3 Wednesday = 4 Thursday = 5 Friday = 6 Saturday = 7 Date = 8 |
| toTime | String | Range end time |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "label": "{\\"group\\":\\"FilterPanel\\",\\"key\\":\\"i18n_4db508b9-22ca-4dae-8cb2-3149da3ad60a\\"}",
  "i18nLabel": "Morning rush hour",
  "fromDay": [2],
  "fromTime": "07:30:00",
  "toDay": [2],
  "toTime": "09:30:00",
  "id": 1,
  "lastUpdateDate": 1373769166555,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

7.5.5 POST method

Use the POST method to create a range resource.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.5.6 PUT method

Use the PUT method to update a range resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.5.7 DELETE method

Use the DELETE method to delete a range resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.6 Saved filters resource

Use the saved filters resource to get, create, update, and delete saved filters. Saved filters are used to save commonly used filter criteria such as date, time, location, and selected data sources. A saved filter can be either public or private.

7.6.1 Data service class

`com.ibm.ioc.filter.SavedFilterDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class

7.6.2 Resource URI

`/ibm/ioc/api/filter-service/savedfilters`

7.6.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

7.6.4 GET method

Use the GET method to get one or more saved filter resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |
| uid | String | User ID |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|-------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| scope | String | Indicates whether the saved filter is public or private |
| uid | String | User ID |
| data | String | String representation of a JSON object that contains the saved filter resources |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "label": "{\"group\\\": \"FilterPanel\\\", \"key\\\": \"i18n_fd8c4c5b-8490-4c7d-876e-228c721dfaac\\\"}\",
  "i18nLabel": "Sample saved filter",
  "scope": "public",
  "uid": "wpsadmin",
  "data":
    "{\"selectedAccordionPaneId\\\": \"dateTime\\\", \"savedFiltersPane\\\": {\"select
    edSavedFilterId\\\": -1}, \"dateTimePane\\\": {\"startDate\\\": \"2013-09-
    01\\\", \"startTime\\\": \"T00:00:00\\\", \"endDate\\\": \"2013-10-
    20\\\", \"endTime\\\": \"T23:59:00\\\", \"onlyOn\\\": {\"type\\\": \"any\\\"}}, \"locationP
    ane\\\": {\"location\\\": \"viewableArea\\\", \"dynamicAccordionPanes\\\": [{\"id\\\":
    49, \"dataSourcePanes\\\": [{\"id\\\": 32, \"isChecked\\\": true, \"moreFilter\\\": []}]
    }, {\"id\\\": 50, \"dataSourcePanes\\\": [{\"id\\\": 34, \"isChecked\\\": false, \"moreFi
    lter\\\": []}]}}], \"autoRefresh\\\": {\"refreshRate\\\": 15000, \"duration\\\": 15, \"in
    terval\\\": \"seconds\\\"}}\",
  "id": 1,
  "lastUpdateDate": 1381663972846,
  "messages": []
}]
```

Sample response content – data object

```
{
  "selectedAccordionPaneId": "dateTime",
  "savedFiltersPane": {
    "selectedSavedFilterId": -1
  },
  "dateTimePane": {
    "startDate": "2013-09-01",
    "startTime": "T00:00:00",
    "endDate": "2013-10-20",
    "endTime": "T23:59:00",
    "onlyOn": {
      "type": "any"
    }
  },
  "locationPane": {
    "location": "viewableArea"
  },
  "dynamicAccordionPanels": [{
    "id": 49,
    "dataSourcePanels": [{
      "id": 32,
      "isChecked": true,
      "moreFilter": []
    }]
  },
  {
    "id": 50,
    "dataSourcePanels": [{
      "id": 34,
      "isChecked": false,
      "moreFilter": []
    }]
  }
],
  "autoRefresh": {
    "refreshRate": 15000,
    "duration": 15,
    "interval": "seconds"
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

7.6.5 POST method

Use the POST method to create a saved filters resource.

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.6.6 PUT method

Use the PUT method to update a saved filter resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the lastUpdateDate value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

7.6.7 DELETE method

Use the DELETE method to delete a saved filter resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

8 Image service

The image service returns a list of images that are installed in IBM Intelligent Operations Center. This includes the images that are installed by the IBM Intelligent Operations Center installer, and the images that are uploaded by a solution administrator.

8.1 Base URI

/ibm/ioc/api/image-service

8.2 Images resource

The image service returns a list of images that are installed in IBM Intelligent Operations Center.

8.2.1 Data service class

com.ibm.ioc.image.ImageDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

8.2.2 Resource URI

/ibm/ioc/api/image-service/images

8.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

8.2.4 GET method

Use the GET method to get a list of images that are installed in IBM Intelligent Operations Center.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------------------------------------------------------------------------------------------------|
| locale | String | The language locale |
| type | String | The image type, valid values are <code>mapIcon</code> , <code>locationMap</code> , and <code>owningOrg</code> |
| shade | String | The map icon shade, valid values are <code>light</code> and <code>dark</code> |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------|--------------|-----------------------------------------------------------------------------------------------------------|
| name | String | Image name, includes the file extension |
| type | String | Image type, valid values are <code>mapIcon</code> , <code>locationMap</code> , and <code>owningOrg</code> |
| uri | String | Image URI |
| shade | String | Image shade, valid values are <code>light</code> and <code>dark</code> . Only applies to map icons |
| size | Long | Image size |
| width | Integer | Image width |
| height | Integer | Image height |
| fileName | String | Image file name, excludes the extension |
| fileType | String | Image file type |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "name": "accident.png",
  "type": "mapIcon",
  "uri":
"/ibm/ioc/theme/static/js/images/map_icons/icons/dark/accident.png",
  "shade": "dark",
  "size": 3397,
  "width": 50,
  "height": 50,
  "fileName": "accident",
  "fileExtension": "png",
  "messages": []
},
{
  "name": "locationMap.png",
  "type": "mapIcon",
  "uri":
"/ibm/ioc/theme/static/js/images/map_icons/icons/dark/locationMap.png",
  "shade": "dark",
  "size": 3424,
  "width": 50,
  "height": 50,
  "fileName": "locationMap",
  "fileExtension": "png",
  "messages": []
},
{
  "name": "water_24.png",
  "type": "owningOrg",
  "uri":
"/ibm/ioc/theme/static/js/images/owning_org_icons/water_24.png",
  "size": 1812,
  "width": 24,
  "height": 24,
  "fileName": "water_24",
  "fileExtension": "png",
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal Server Error | An error occurred while the request was being processed |

9 Internationalization service

Use the internationalization service to get, create, update and delete translated string values for different locales. The text strings that are returned by the service are used by the

IBM Intelligent Operations Center user interface components to display translated strings for a user's locale.

9.1 Base URI

/ibm/ioc/api/i18n-service

9.2 Internationalization resource

Use the internationalization resource to get, create, update and delete i18n resources that contain translated string values.

9.2.1 Data service class

com.ibm.ioc.image.ImageDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

9.2.2 Resource URI

/ibm/ioc/api/i18n-service/resources

9.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | Yes | Yes |
| PUT | Yes | Yes |
| DELETE | Yes | Yes |

9.2.4 GET method

Use the GET method to get one or more i18n resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| locale | String | The language locale |
| group | String | Group name. By using the group name, you can fetch groups of translated values with a single call, where you can specify multiple group query parameters to get resources for multiple groups |
| key | String | The resource key |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|--------------------------------------------------------------|
| id | Integer | Resource ID |
| group | String | Group name |
| key | String | The resource key |
| value | String | The translated resource value |
| locale | String | The locale of the translated resource |
| lastUpdateDate | Long | Timestamp that indicates when the resource was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "group": "Sysprop",
  "locale": "fr",
  "key": "AnalyticServerHostname",
  "value": "Nom d'hôte du serveur d'analyse",
  "id": 7308,
  "lastUpdateDate": 1378752434686,
  "messages": []
},
{
  "group": "Sysprop",
  "locale": "fr",
  "key": "AnalyticServerReportAdminPort",
  "value": "Port sécurisé d'IBM Cognos Gateway",
  "id": 7309,
  "lastUpdateDate": 1378752434687,
  "messages": []
},
{
  "group": "Sysprop",
  "locale": "fr",
  "key": "ApplicationServerHostname",
  "value": "Nom de l'hôte du serveur d'applications",
  "id": 7310,
  "lastUpdateDate": 1378752434689,
```

```
    "messages": []
  },
  {
    "group": "Sysprop",
    "locale": "fr",
    "key": "CacheKpis",
    "value": "Indique si les indicateurs clé de performance sont mis en
cache (vrai/faux)",
    "id": 7311,
    "lastUpdateDate": 1378752434691,
    "messages": []
  },
  {
    "group": "Sysprop",
    "locale": "fr",
    "key": "ContactsServiceUrl",
    "value": "Adresse URL de service des contacts",
    "id": 7312,
    "lastUpdateDate": 1378752434694,
    "messages": []
  },
  {
    "group": "Sysprop",
    "locale": "fr",
    "key": "SametimeServerHostname",
    "value": "Nom d'hôte du serveur Lotus Sametime",
    "id": 7336,
    "lastUpdateDate": 1378752434732,
    "messages": []
  }
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 403 | Forbidden | Not allowed to get the resource |
| 404 | Not found | The resource cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

9.2.5 POST method

Use the POST method to create an i18n resource.

Request content

MIME type: application/json.

Parameters:

| Name | Type | Description |
|--------|--------|---------------------------|
| group | String | Group name |
| key | String | Resource key |
| value | String | Translated resource value |
| locale | String | Locale |

Response content

MIME type: application/json.

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

9.2.6 PUT method

Use the PUT method to update an i18n resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes:

| Code | Description | |
|------|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

9.2.7 DELETE method

Use the DELETE method to delete an i18n resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10 Location map service

The location map service is used by the location map widget and the location map manager solution administration user interface. Before you use the location map service, familiarize yourself with the following terms that relate to the usage and implementation of the location map service:

- **Category:** A category contains a collection. Users can access collections that are categorized more easily. Sample categories include “Police Stations”, “Stadiums”, “Schools” and so on.
- **Collection:** A collection is a group of location maps. A collection usually represents a location. Sample collections include “City Stadium” and “Sheriff’s Office”.

- **Location map:** A location map is an image representation of a map. A sample map might be Floor 1, which is assigned to a "City Stadium" collection, and to a "Stadiums" category.
- **Area:** An area is a user defined polygon that is on the location map. Each area is assigned a name.

The location map service provides functionality to create, read, update, and delete location map categories, collections and location maps. It also provides functionality to create, read and delete area locations.

10.1 Base URI

/ibm/ioc/api/location-map-service

10.2 Categories resource

Use the categories resource to get, create, update, and delete location map categories.

10.2.1 Data service class

com.ibm.ioc.locationmap.CategoryDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

10.2.2 Resource URI

/ibm/ioc/api/location-map-service/categories

10.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

10.2.4 GET method

Use the GET method to get one or more category resources.

Request content

MIME type: application/json.

Path parameters

| Name | Type | Description |
|------|--------|-------------------------------|
| id | String | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|-------------------------------------------------------------------------------------|
| id | String | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| lastUpdateDate | Long | Timestamp that indicates when the record was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "id": "d3c6f743-2354-4486-b52f-e8e94f8af23c",
  "label": "{\"group\":\"LocationMap\",\"key\":\"stadiums\"}",
  "i18nLabel": "Stadiums",
  "lastUpdateDate": 1361368339335,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

10.2.5 POST method

Use the POST method to create a category resource.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|----------------|--------------|-------------------------------------------------------------------------------------|
| id | String | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| lastUpdateDate | Long | Timestamp that indicates when the record was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample POST request content

```
{
  "group": "LocationMap",
  "locale": "default",
  "key": "new_category",
  "value": "New Location Map Category"
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.2.6 PUT method

Use the PUT method to update a category resource.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|------------------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.2.7 DELETE method

Use the DELETE method to delete a category resource. If you delete a category, all child collections, location maps, and areas that are in the category are deleted.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.3 Collections resource

Use the collections resource to create, read, update and delete location map collections.

10.3.1 Data service class

com.ibm.ioc.locationmap.CollectionDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

10.3.2 Resource URI

/ibm/ioc/api/location-map-service/collections

10.3.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

10.3.4 GET method

Use the GET method to get one or more collection resources.

Request content

MIME type: application/json.

Path parameters

| Name | Type | Description |
|------|--------|-------------------------------|
| id | String | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | String | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the collection |
| location | String | Well known text representation of the location where the location map collection is displayed on the geospatial map, for example, POINT (-93.284097 44.981237) |
| categoryId | String | Category identifier of the category that the collection is associated with. |
| lastUpdateDate | Long | Timestamp that indicates when the record was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "id": "COLLECTION_1",
  "label":
  "{\"group\":\"LocationMap\",\"key\":\"sample_data_city_stadium\"}",
  "i18nLabel": "City Stadium",
  "location": "POINT (-93.284097 44.981237) ",
  "categoryId": "CATEGORY_1",
  "lastUpdateDate": 1378752416478,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

10.3.5 POST method

Use the POST method to create a collection resource.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | String | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the collection |
| location | String | Well known text representation of the location where the location map collection is displayed on the geospatial map, for example, POINT (-93.284097 44.981237) |
| categoryId | String | Category identifier of the category that the collection is associated with |

Sample POST request content

```
{
  "label":
  "{ \"group\": \"LocationMap\", \"key\": \"sample_data_city_stadium\" },
  \"i18nLabel\": \"City Stadium\",
  \"location\": \"POINT (-93.284097 44.981237) \",
  \"categoryId\": \"CATEGORY_1\"
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.3.6 PUT method

Use the PUT method to update a collection resource.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.3.7 DELETE method

Use the DELETE method to delete a collection resource. If you delete a collection, all child location maps and areas are deleted.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.4 Maps resource

Use the maps resource to create, read, update, and delete location maps.

10.4.1 Data service class

com.ibm.ioc.locationmap.MapDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

10.4.2 Resource URI

/ibm/ioc/api/location-map-service/maps

10.4.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

10.4.4 GET method

Use the GET method to get one or more location map resources.

Request content

MIME type: application/json.

Path parameters

| Name | Type | Description |
|------|--------|-------------------------------|
| id | String | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|-----------------------|--------------|-------------------------------------------------------------------------------------|
| id | String | Resource ID |
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| backgroundImage | String | Background image URI |
| backgroundImageHeight | String | Height of the maps background image |
| backgroundImageWidth | String | Width of the maps background image |
| collectionId | String | Identifier of the collection that the map is associated with |
| lastUpdateDate | Long | Timestamp that indicates when the record was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "id": "MAP_1",
  "collectionId": "COLLECTION_1",
  "label":
  "{\"group\":\"LocationMap\", \"key\":\"sample_data_floor_plan\"}",
  "i18nLabel": "Floor Plan",
  "backgroundImage":
  "/ibm/ioc/theme/static/js/images/location_maps/CityStadium.jpg",
  "backgroundImageHeight": "620",
  "backgroundImageWidth": "723",
  "lastUpdateDate": 1378752416489,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

10.4.5 POST method

Use the POST method to create a location map resource.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|-----------------------|--------|-------------------------------------------------------------------------------------|
| label | String | Group and key reference for the translation REST service |
| i18nLabel | String | Locale translated user interface label for the column name, generated by the server |
| backgroundImage | String | Background image URI |
| backgroundImageHeight | String | Height of the maps background image |
| backgroundImageWidth | String | Width of the maps background image |
| collectionId | String | Identifier of the collection that the map is associated with |

Sample POST request content

```
{  
  
  "backgroundImage":"/ibm/ioc/theme/static/js/images/location_maps/Police_S  
tation.jpg",  
  "backgroundImageWidth":723,  
  "backgroundImageHeight":620,  
  "collectionId":"ea3487d8-5e85-48e6-8d70-829e5dab6aba",  
  "label":{"group":"LocationMap","key":"i18n_eac9f22f-bab9-44ca-  
85bf-420240cc097a"}  
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.4.6 PUT method

Use the PUT method to update a location map resource.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.4.7 DELETE method

Use the DELETE method to delete a location map resource. If you delete a location map, all child areas are deleted.

Path parameters

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.5 Area locations resource

Use the area locations resource to create, read, and delete location map area locations.

10.5.1 Data service class

`com.ibm.ioc.locationmap.AreaLocationDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

10.5.2 Resource URI

`/ibm/ioc/api/location-map-service/areaLocations`

10.5.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| DELETE | No | Yes |

10.5.4 GET method

Use the GET method to get either all defined area locations, or all area locations that are defined for a specific location map.

Request content

MIME type: `application/json`.

Path parameters

| Name | Type | Description |
|-------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>{id}/areas</code> | String | <code>{id}</code> is a map ID. If you specify the parameter, all area locations that are on a specific map are returned, for example: <code>/ibm/ioc/api/location-map-service/areaLocations/MAP_1/areas</code> |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------------|--------------|------------------------------------------------------------------------------------------------|
| id | String | Resource ID |
| name | String | Name of the area location |
| location | String | Well known text representation of the location where the area is displayed on the location map |
| parentAreaId | String | Identifier of the area's parent area |
| mapId | String | Map identifier of the map that the area is on |
| children | String array | Array of the area's child areas |
| labelDescription | String | Area descriptions group and key reference for the translation REST service |
| i18nLabelDescription | String | Locale translated user interface label for the area description, generated by the server |
| lastUpdateDate | Long | Timestamp that indicates when the record was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "id": "Box122",
  "name": "Box122",
  "location": "POLYGON ((234 196, 239 190, 265 201, 251 215, 234
196))",
  "labelDescription":
"{\"group\":\"LocationMap\", \"key\":\"sample_data_first_level\"}",
  "i18nLabelDescription": "Private Viewing Box on the 1st Level",
  "lastUpdateDate": 1378752416497,
  "parentAreaId": null,
  "children": [],
  "messages": [],
  "mapId": "MAP_1"
},
{
  "id": "Box142",
  "name": "Box142",
  "location": "POLYGON ((170 102, 170 76, 183 75, 182 101, 170
102))",
  "labelDescription":
"{\"group\":\"LocationMap\", \"key\":\"sample_data_first_level\"}",
  "i18nLabelDescription": "Private Viewing Box on the 1st Level",
  "lastUpdateDate": 1378752416507,
  "parentAreaId": null,
```

```
    "children": [],
    "messages": [],
    "mapId": "MAP_1"
  },
  {
    "id": "Box143",
    "name": "Box143",
    "location": "POLYGON ((155 101, 155 75, 170 76, 169 102, 155
101))",
    "labelDescription":
"{\"group\":\"LocationMap\", \"key\":\"sample_data_first_level\"}",
    "i18nLabelDescription": "Private Viewing Box on the 1st Level",
    "lastUpdateDate": 1378752416504,
    "parentAreaId": null,
    "children": [],
    "messages": [],
    "mapId": "MAP_1"
  },
  {
    "id": "Box406",
    "name": "Box406",
    "location": "POLYGON ((54 238, 74 217, 84 228, 65 248, 54 238))",
    "labelDescription":
"{\"group\":\"LocationMap\", \"key\":\"sample_data_fourth_level\"}",
    "i18nLabelDescription": "Private Viewing Box on the 4th Level",
    "lastUpdateDate": 1378752416512,
    "parentAreaId": null,
    "children": [],
    "messages": [],
    "mapId": "MAP_1"
  },
  {
    "id": "Field",
    "name": "Field",
    "location": "POLYGON ((121 177, 120 126, 229 126, 228 177, 121
177))",
    "labelDescription":
"{\"group\":\"LocationMap\", \"key\":\"sample_data_field\"}",
    "i18nLabelDescription": "Football Field",
    "lastUpdateDate": 1378752416515,
    "parentAreaId": null,
    "children": [],
    "messages": [],
    "mapId": "MAP_1"
  }
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

10.5.5 POST method

Use the POST method to create an area location resource on a specific location map.

Path parameters

| Name | Type | Description |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| /[{id}]/areas | String | {id} is the map identifier of the map to create the area locations on, for example: /ibm/ioc/api/location-map-service/areaLocations/MAP_1/areas |

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|----------------------|--------------|------------------------------------------------------------------------------------------------|
| name | String | Name of the area location |
| location | String | Well known text representation of the location where the area is displayed on the location map |
| parentAreaId | String | Identifier of the area's parent area |
| mapId | String | Map identifier of the map that the area is on |
| children | String array | Array of the area's child areas |
| labelDescription | String | Area descriptions group and key reference for the translation REST service |
| i18nLabelDescription | String | Locale translated user interface label for the area description, generated by the server |

Sample POST request content

```
{
  "name": "GateC",
  "labelDescription":
  "{\\"group\\":\\"LocationMap\\",\\"key\\":\\"i18n_c7fbfd35-ce75-4ee4-895c-e7e6bee04600\\"}",
  "id": "GateC",
  "parentAreaId": null,
  "mapId": "MAP_1",
  "location": "POLYGON((128.63070539419
284.35961795876,134.63347164592 262.06362902377,226.39004149378
264.63624313165,229.82019363762 296.36515046222,128.63070539419
284.35961795876))"
}
```

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

10.5.6 DELETE method

Use the DELETE method to delete an area location resource on a specific location map.

Path parameters

| Name | Type | Description |
|-------|--------|-------------------------------------------------------------|
| mapId | String | The ID of the map that the area location is associated with |
| id | String | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 404 | Not found | The resource to be deleted cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

11 KPI service

IBM Intelligent Operations Center uses IBM Business Monitor as its key performance indicator (KPI) processing engine. KPIs are defined in IBM Business Monitor model applications that are installed on the IBM Business Monitor server. IBM Intelligent Operations Center retrieves the KPI values from the IBM Business Monitor server at startup and stores the values in a cache. The cache is refreshed at configurable intervals to ensure that the KPI values are current. KPIs can also be updated asynchronously by adding outbound events to the monitor model applications that send KPI updates to IBM Intelligent Operations Center based on various trigger conditions. Regardless of how the KPIs are updated, the KPI values are stored in the cache and made available to applications through the KPI service.

In IBM Business Monitor, you can define KPIs whose values are derived from other KPIs but it does support hierarchical KPIs. IBM Intelligent Operations Center implements hierarchical KPIs by overlaying a hierarchical structure onto a set of KPIs, where the parent KPI values are defined to derive their value from one or more child KPIs.

The KPI service is used to define the KPI hierarchy. The hierarchy consists of owning organizations and KPIs. An owning organization is a container object that is associated with a monitor model, an icon and a display label. The owning organization contains one or more child KPIs that are defined in its associated monitor model. The child KPIs can have

child KPIs. The sample KPI hierarchy that is shown in Figure 2 contains an owning organization that is called Water and that has three child KPIs: Water Management, Water Quality, and Flood Control.



Figure 2 Sample KPI hierarchy

11.1 Base URI

/ibm/ioc/api/kpi-service

11.2 Owning organization resource

Use the owning organizations resource to get a list of owning organizations. An owning organization is associated with the IBM Business Monitor model, an icon, and a display label.

11.2.1 Data service class

com.ibm.ioc.kpi.dataservices.OwningOrgDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

11.2.2 Resource URI

/ibm/ioc/api/kpi-service/owningorgs

11.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

11.2.4 GET method

Use the GET method to get one or more owning organization resources. The owning organizations are extracted from the KPI tree resource.

Path parameters

| Name | Type | Description |
|------|--------|------------------------------------|
| id | String | The owning organization identifier |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|-------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Id | String | The owning organization identifier |
| hasChildren | Boolean | Indicates whether or not the owning organization has child KPIs |
| icon | String | The path to the owning organization icon |
| dbId | Integer | Database identifier for the entry |
| name | String | The owning organization name |
| entryType | String | The KPI hierarchy entry type. For owning organizations, this value is set to <code>model</code> to indicate that it is associated with an IBM Business Monitor model |

Example GET request

The following GET request returns all the owning organizations that are defined in the KPI hierarchy.

`/ibm/ioc/api/kpi-service/owningorgs`

```
[{
  "hasChildren": true,
  "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/safety_24.png",
  "dbId": 0,
  "name": "Public Safety",
  "id": "424109cd-8455-4c12-8fdc-111d8aa92316",
  "entryType": "model"
},
{
  "hasChildren": true,
  "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/transportation_24.png",
```

```
    "dbId": 1,
    "name": "Transportation",
    "id": "3b05b9fc-ecbc-445b-88ee-823d6ed073a1",
    "entryType": "model"
  },
  {
    "hasChildren": true,
    "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/water_24.png",
    "dbId": 2,
    "name": "Water",
    "id": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "entryType": "model"
  }
]
```

The following GET request returns all the owning organizations that are defined in the KPI hierarchy. The `locale` query parameter with a value of `de` is used to return the translated German labels for the owning organization names.

`/ibm/ioc/api/kpi-service/owningorgs?locale=de`

```
[{
  "hasChildren": true,
  "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/safety_24.png",
  "dbId": 0,
  "name": "Öffentliche Sicherheit",
  "id": "424109cd-8455-4c12-8fdc-111d8aa92316",
  "entryType": "model"
},
{
  "hasChildren": true,
  "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/transportation_24.png",
  "dbId": 1,
  "name": "Verkehr",
  "id": "3b05b9fc-ecbc-445b-88ee-823d6ed073a1",
  "entryType": "model"
},
{
  "hasChildren": true,
  "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/water_24.png",
  "dbId": 2,
  "name": "Wasser",
  "id": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
  "entryType": "model"
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

11.3 KPI tree resource

Use the KPI tree resource to get the KPI tree hierarchy.

11.3.1 Data service class

`com.ibm.ioc.kpi.dataservices.KpiTreeDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

11.3.2 Resource URI

`/ibm/ioc/api/kpi-service/kpi-tree`

11.3.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |

11.3.4 GET method

The GET method returns the KPI hierarchy.

Response content

MIME type: `application/json`

Properties:

| Name | | Type | Description |
|------------|---------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| identifier | | String | Used by dojo store to specify which item field is used as the identifier. |
| label | | String | Used by dojo store to specify which item field is used as the label. |
| Items | | Array | An array of KPIs and owning organizations that are contained in the KPI hierarchy. |
| | id | String | Identifier of the owning organization or KPI. |
| | name | String | Name of the owning organization or KPI . |
| | dbId | Integer | Database identifier for the entry. |
| | modelId | String | The identifier of the IBM Business Monitor model that contains the KPI definitions. |
| | kpiId | String | Identifier that is used to retrieve the translated name of the owning organization or KPI from the i18n service. |
| | entryType | String | The hierarchy entry type. A entry type value of <code>model</code> indicates that the resource is an owning organization. An entry type value of <code>kpi</code> indicates that the resource is a KPI that is defined in an IBM Business Monitor model. |
| | versionId | String | The version identifier of the IBM Business Monitor model that contains the KPI definitions. |
| | icon | String | The path location to the owning organization icon. |
| | kpiCalcMethod | String | |
| | children | Array | An array that contains the identifiers of the child KPIs that are associated with the owning organization or KPI. |
| | permissions | Array | An array of authorizations that are associated with the KPI. Authorizations are only associated with top level KPIs. |

Sample response content

```
{
  "identifier": "id",
  "label": "name",
  "items": [{
    "name": "Water",
    "id": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "dbId": 0,
    "modelId": "ioc_sample_water_model",
    "kpiId": "Water",
    "entryType": "model",
    "versionId": "20130324101417",
    "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/water_24.png",
    "kpiCalcMethod": "",
    "children": [{
      "_reference": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32"
    }],
  }],
}
```

```
{
  "_reference": "2a038e25-00fb-4a50-8249-06e5f7689fe5"
},
{
  "_reference": "21e133b9-b678-4323-8d8a-e6882b6b04e2"
}]
},
{
  "name": "Water Management",
  "id": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32",
  "dbId": 1,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Water_Management",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "calculated",
  "children": [{
    "_reference": "2a66cf8f-9a3f-46d2-8267-7d1d58206cf2"
  }],
  "permissions": [{
    "resourceId": 1,
    "resourceType": "owning-org",
    "identity": "CityWideExecutive",
    "identityType": "G",
    "writeAccess": false,
    "id": 110,
    "lastUpdateDate": 1379246673834,
    "messages": []
  },
  {
    "resourceId": 1,
    "resourceType": "owning-org",
    "identity": "wpsadmins",
    "identityType": "G",
    "writeAccess": false,
    "id": 111,
    "lastUpdateDate": 1379246673856,
    "messages": []
  },
  {
    "resourceId": 1,
    "resourceType": "owning-org",
    "identity": "CityWideAdmin",
    "identityType": "G",
    "writeAccess": false,
    "id": 112,
    "lastUpdateDate": 1379246673858,
    "messages": []
  },
  {
    "resourceId": 1,
    "resourceType": "owning-org",
    "identity": "CityWideOperator",
    "identityType": "G",
    "writeAccess": false,
    "id": 113,
```

```
        "lastUpdateDate": 1379246673860,
        "messages": []
    },
    {
        "resourceId": 1,
        "resourceType": "owning-org",
        "identity": "CityWideSupervisor",
        "identityType": "G",
        "writeAccess": false,
        "id": 114,
        "lastUpdateDate": 1379246673861,
        "messages": []
    },
    {
        "resourceId": 1,
        "resourceType": "owning-org",
        "identity": "wpsadmin",
        "identityType": "U",
        "writeAccess": false,
        "id": 115,
        "lastUpdateDate": 1379246673863,
        "messages": []
    }
  ]
},
{
  "name": "Strategical Planning",
  "id": "2a66cf8f-9a3f-46d2-8267-7d1d58206cf2",
  "dbId": 2,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Strategical_Planning",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "calculated",
  "children": [{
    "_reference": "4cc1951f-cafa-43e9-8ae7-92ca53bdf222"
  },
  {
    "_reference": "0518e2e5-1195-4aff-867f-5294e4072344"
  }
  ]
},
{
  "name": "Water Supply vs Demand",
  "id": "4cc1951f-cafa-43e9-8ae7-92ca53bdf222",
  "dbId": 3,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Water_Supply_vs_Demand",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "aggregated"
},
{
  "name": "Water Leakage",
  "id": "0518e2e5-1195-4aff-867f-5294e4072344",
  "dbId": 4,
  "modelId": "ioc_sample_water_model",
```

```
    "kpiId": "Water_Leakage",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "aggregated"
  },
  {
    "name": "Water Quality",
    "id": "2a038e25-00fb-4a50-8249-06e5f7689fe5",
    "dbId": 5,
    "modelId": "ioc_sample_water_model",
    "kpiId": "Water_Quality",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "calculated",
    "children": [{
      "_reference": "e5489a0f-8ee3-455d-8b6d-da0c8dec1e41"
    }],
    "permissions": [{
      "resourceId": 5,
      "resourceType": "owning-org",
      "identity": "CityWideSupervisor",
      "identityType": "G",
      "writeAccess": false,
      "id": 120,
      "lastUpdateDate": 1379246673947,
      "messages": []
    },
    {
      "resourceId": 5,
      "resourceType": "owning-org",
      "identity": "wpsadmin",
      "identityType": "U",
      "writeAccess": false,
      "id": 121,
      "lastUpdateDate": 1379246673949,
      "messages": []
    },
    {
      "resourceId": 5,
      "resourceType": "owning-org",
      "identity": "CityWideExecutive",
      "identityType": "G",
      "writeAccess": false,
      "id": 116,
      "lastUpdateDate": 1379246673931,
      "messages": []
    },
    {
      "resourceId": 5,
      "resourceType": "owning-org",
      "identity": "wpsadmins",
      "identityType": "G",
      "writeAccess": false,
      "id": 117,
      "lastUpdateDate": 1379246673935,
```

```
        "messages": []
      },
      {
        "resourceId": 5,
        "resourceType": "owning-org",
        "identity": "CityWideAdmin",
        "identityType": "G",
        "writeAccess": false,
        "id": 118,
        "lastUpdateDate": 1379246673939,
        "messages": []
      },
      {
        "resourceId": 5,
        "resourceType": "owning-org",
        "identity": "CityWideOperator",
        "identityType": "G",
        "writeAccess": false,
        "id": 119,
        "lastUpdateDate": 1379246673943,
        "messages": []
      }
    ]
  },
  {
    "name": "Physical Indicators",
    "id": "e5489a0f-8ee3-455d-8b6d-da0c8dec1e41",
    "dbId": 6,
    "modelId": "ioc_sample_water_model",
    "kpiId": "Physical_Indicators",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "calculated",
    "children": [
      {
        "_reference": "e3f8f175-503b-400a-8f3c-941a133441f8"
      },
      {
        "_reference": "954679f0-cdce-4cca-8b9d-3bd764bbd3a1"
      }
    ]
  },
  {
    "name": "pH",
    "id": "e3f8f175-503b-400a-8f3c-941a133441f8",
    "dbId": 7,
    "modelId": "ioc_sample_water_model",
    "kpiId": "pH",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "aggregated"
  },
  {
    "name": "Turbidity",
    "id": "954679f0-cdce-4cca-8b9d-3bd764bbd3a1",
    "dbId": 8,
    "modelId": "ioc_sample_water_model",
    "kpiId": "Turbidity",
```

```
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "aggregated"
  },
  {
    "name": "Flood Control",
    "id": "21e133b9-b678-4323-8d8a-e6882b6b04e2",
    "dbId": 9,
    "modelId": "ioc_sample_water_model",
    "kpiId": "Flood_Control",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "calculated",
    "children": [{
      "_reference": "d80bff33-2f3b-4fdf-8fd7-e26c756bc182"
    }],
    "permissions": [{
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "CityWideAdmin",
      "identityType": "G",
      "writeAccess": false,
      "id": 124,
      "lastUpdateDate": 1379246673985,
      "messages": []
    },
    {
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "CityWideOperator",
      "identityType": "G",
      "writeAccess": false,
      "id": 125,
      "lastUpdateDate": 1379246673990,
      "messages": []
    },
    {
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "CityWideSupervisor",
      "identityType": "G",
      "writeAccess": false,
      "id": 126,
      "lastUpdateDate": 1379246673995,
      "messages": []
    },
    {
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "wpsadmin",
      "identityType": "U",
      "writeAccess": false,
      "id": 127,
      "lastUpdateDate": 1379246673997,
      "messages": []
    }
  ]
}
```

```
    },
    {
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "CityWideExecutive",
      "identityType": "G",
      "writeAccess": false,
      "id": 122,
      "lastUpdateDate": 1379246673977,
      "messages": []
    },
    {
      "resourceId": 9,
      "resourceType": "owning-org",
      "identity": "wpsadmins",
      "identityType": "G",
      "writeAccess": false,
      "id": 123,
      "lastUpdateDate": 1379246673981,
      "messages": []
    }
  ]
},
{
  "name": "Water Levels",
  "id": "d80bfff33-2f3b-4fdf-8fd7-e26c756bc182",
  "dbId": 10,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Water_Levels",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "calculated",
  "children": [{
    "_reference": "571b5a89-02f6-44f2-82bf-4a54a74b9a52"
  },
  {
    "_reference": "3bc8a579-f34c-4aba-878e-3f8815bc94d5"
  }
],
{
  "name": "Flow Discharge City River",
  "id": "571b5a89-02f6-44f2-82bf-4a54a74b9a52",
  "dbId": 11,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Flow_Discharge_City_River",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "aggregated"
},
{
  "name": "Water Level City Lake",
  "id": "3bc8a579-f34c-4aba-878e-3f8815bc94d5",
  "dbId": 12,
  "modelId": "ioc_sample_water_model",
  "kpiId": "Water_Level_City_Lake",
  "entryType": "kpi",
```

```
    "versionId": "20130324101417",  
    "icon": "",  
    "kpiCalcMethod": "aggregated"  
  }  
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

11.3.5 POST method

Use the POST method to update the KPI hierarchy. You can use the POST method to add and remove owning organizations and KPIs from the hierarchy, and to assign resource permissions to the top level KPIs. A top level KPI is defined as a KPI whose parent is an owning organization.

Request content

MIME type: application/json

Parameters:

| Name | | Type | Description |
|------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| identifier | | String | Used by dojo store to specify which field is used as the identifier. |
| label | | String | Used by dojo store to specify which field is used as the identifier. |
| Items | | Array | An array of items KPIs and owning organizations that are contained in the KPI hierarchy. |
| | id | String | Identifier of the owning organization or KPI. |
| | name | String | Name of the owning organization or KPI. |
| | modelId | String | The identifier of the IBM Business Monitor model that contains the KPI definitions. |
| | kpid | String | Identifier used to retrieve the translated name of the owning organization or KPI from the i18n service. |
| | entryType | String | The hierarchy entry type. A entry type value of <code>model</code> indicates that the resource is an owning organization. An entry type value of <code>kpi</code> indicates that the resource is a KPI that is defined in an IBM Business Monitor model. |
| | versionId | String | The version identifier of the IBM Business Monitor model that contains the KPI definitions |
| | icon | String | The path location to the owning organization icon |

| Name | | Type | Description |
|------|---------------|--------|-----------------------------------------------------------------------------------------------------------------------------|
| | kpiCalcMethod | String | |
| | children | Array | An array that contains the identifiers of the child KPIs that are associated with either the owning organization or the KPI |
| | permissions | Array | An array of authorizations that are associated with the KPI. Authorizations are only associated with top level KPIs. |

Sample POST request content

The following POST request updates the KPI tree hierarchy to have a single owning organization that is called "Public Safety". This owning organization has no KPIs that are associated with it.

```
{
  "identifier": "id",
  "label": "name",
  "items": [{
    "name": "Public Safety",
    "id": "424109cd-8455-4c12-8fdc-111d8aa92316",
    "modelId": "ioc_sample_public_safety_model",
    "kpiId": "Public_Safety",
    "entryType": "model",
    "versionId": "20130324101417",
    "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/safety_24.png",
    "kpiCalcMethod": "",
    "permissions": [],
    "children": []
  }]
}
```

The following POST request builds on the previous example by adding three KPIs to the "Public Safety" owning organization. The three KPIs, which are called "Public Safety Management", "Police Department", and "Fire Department", have no child KPIs.

```
{
  "identifier": "id",
  "label": "name",
  "items": [{
    "name": "Public Safety",
    "id": "424109cd-8455-4c12-8fdc-111d8aa92316",
    "modelId": "ioc_sample_public_safety_model",
    "kpiId": "Public_Safety",
    "entryType": "model",
    "versionId": "20130324101417",
    "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/safety_24.png",
    "kpiCalcMethod": "",
    "permissions": [],
    "children": [{
      "_reference": "04c43653-ccd6-4a00-8d5b-d0d98bc5cfe0"
    }],
  }
}
```

```
        "_reference": "22995b3f-db97-4e29-8b2e-8a7e71d5f4d9"
      },
      {
        "_reference": "f1dd09bc-2c24-4093-838c-1e17a99a7411"
      }
    ],
    {
      "name": "Public Safety Management",
      "id": "04c43653-ccd6-4a00-8d5b-d0d98bc5cfe0",
      "modelId": "ioc_sample_public_safety_model",
      "kpiId": "Public_Safety_Management",
      "entryType": "kpi",
      "versionId": "20130324101417",
      "icon": "",
      "kpiCalcMethod": "calculated",
      "permissions": [],
      "children": []
    },
    {
      "name": "Police Department",
      "id": "22995b3f-db97-4e29-8b2e-8a7e71d5f4d9",
      "modelId": "ioc_sample_public_safety_model",
      "kpiId": "Police_Department",
      "entryType": "kpi",
      "versionId": "20130324101417",
      "icon": "",
      "kpiCalcMethod": "calculated",
      "permissions": [],
      "children": []
    },
    {
      "name": "Fire Department",
      "id": "f1dd09bc-2c24-4093-838c-1e17a99a7411",
      "dbId": 7,
      "modelId": "ioc_sample_public_safety_model",
      "kpiId": "Fire_Department",
      "entryType": "kpi",
      "versionId": "20130324101417",
      "icon": "",
      "kpiCalcMethod": "calculated",
      "permissions": [],
      "children": []
    }
  ]
}
```

The following POST request builds on the previous example by adding the resource authorizations to the "Public Safety Management", "Police Department", and "Fire Department" KPIs. Resource authorizations are defined by using the authorization service and are specified for a KPI in the hierarchy by using the permissions property. Resource authorizations can only be specified for top level KPIs. A top level KPI is a KPI whose parent is an owning organization.

```
{
  "identifier": "id",
  "label": "name",
  "items": [{
    "name": "Public Safety",
    "id": "424109cd-8455-4c12-8fdc-111d8aa92316",
    "modelId": "ioc_sample_public_safety_model",
    "kpiId": "Public_Safety",
    "entryType": "model",
    "versionId": "20130324101417",
    "icon":
"/ibm/ioc/theme/static/js/images/owning_org_icons/safety_24.png",
    "kpiCalcMethod": "",
    "permissions": [],
    "children": [{
      "_reference": "04c43653-ccd6-4a00-8d5b-d0d98bc5cfe0"
    },
    {
      "_reference": "22995b3f-db97-4e29-8b2e-8a7e71d5f4d9"
    },
    {
      "_reference": "f1dd09bc-2c24-4093-838c-1e17a99a7411"
    }
  ]
},
{
  "name": "Public Safety Management",
  "id": "04c43653-ccd6-4a00-8d5b-d0d98bc5cfe0",
  "modelId": "ioc_sample_public_safety_model",
  "kpiId": "Public_Safety_Management",
  "entryType": "kpi",
  "versionId": "20130324101417",
  "icon": "",
  "kpiCalcMethod": "calculated",
  "permissions": [{
    "resourceId": 15,
    "resourceType": "owning-org",
    "identity": "CityWideExecutive",
    "identityType": "G",
    "writeAccess": true,
    "id": 629,
    "lastUpdateDate": 1379440645393,
    "messages": []
  },
  {
    "resourceId": 15,
    "resourceType": "owning-org",
    "identity": "wpsadmins",
    "identityType": "G",
    "writeAccess": true,
    "id": 611,
    "lastUpdateDate": 1379440645331,
    "messages": []
  },
  {
    "resourceId": 15,
    "resourceType": "owning-org",
    "identity": "CityWideAdmin",
```

```
        "identityType": "G",
        "writeAccess": true,
        "id": 620,
        "lastUpdateDate": 1379440645393,
        "messages": []
    },
    {
        "resourceId": 15,
        "resourceType": "owning-org",
        "identity": "CityWideOperator",
        "identityType": "G",
        "writeAccess": true,
        "id": 638,
        "lastUpdateDate": 1379440645393,
        "messages": []
    },
    {
        "resourceId": 15,
        "resourceType": "owning-org",
        "identity": "CityWideSupervisor",
        "identityType": "G",
        "writeAccess": true,
        "id": 647,
        "lastUpdateDate": 1379440645409,
        "messages": []
    },
    {
        "resourceId": 15,
        "resourceType": "owning-org",
        "identity": "wpsadmin",
        "identityType": "U",
        "writeAccess": true,
        "id": 602,
        "lastUpdateDate": 1379440645065,
        "messages": []
    }
],
"children": []
},
{
    "name": "Police Department",
    "id": "22995b3f-db97-4e29-8b2e-8a7e71d5f4d9",
    "modelId": "ioc_sample_public_safety_model",
    "kpiId": "Police_Department",
    "entryType": "kpi",
    "versionId": "20130324101417",
    "icon": "",
    "kpiCalcMethod": "calculated",
    "permissions": [{
        "resourceId": 12,
        "resourceType": "owning-org",
        "identity": "wpsadmins",
        "identityType": "G",
        "writeAccess": true,
        "id": 612,
        "lastUpdateDate": 1379440645331,
        "messages": []
    }
],
```

```
{
  "resourceId": 12,
  "resourceType": "owning-org",
  "identity": "CityWideAdmin",
  "identityType": "G",
  "writeAccess": true,
  "id": 621,
  "lastUpdateDate": 1379440645393,
  "messages": []
},
{
  "resourceId": 12,
  "resourceType": "owning-org",
  "identity": "CityWideOperator",
  "identityType": "G",
  "writeAccess": true,
  "id": 639,
  "lastUpdateDate": 1379440645393,
  "messages": []
},
{
  "resourceId": 12,
  "resourceType": "owning-org",
  "identity": "CityWideSupervisor",
  "identityType": "G",
  "writeAccess": true,
  "id": 648,
  "lastUpdateDate": 1379440645409,
  "messages": []
},
{
  "resourceId": 12,
  "resourceType": "owning-org",
  "identity": "wpsadmin",
  "identityType": "U",
  "writeAccess": true,
  "id": 603,
  "lastUpdateDate": 1379440645065,
  "messages": []
},
{
  "resourceId": 12,
  "resourceType": "owning-org",
  "identity": "CityWideExecutive",
  "identityType": "G",
  "writeAccess": true,
  "id": 630,
  "lastUpdateDate": 1379440645393,
  "messages": []
}],
"children": []
},
{
  "name": "Fire Department",
  "id": "fldd09bc-2c24-4093-838c-1e17a99a7411",
  "dbId": 7,
  "modelId": "ioc_sample_public_safety_model",
```

```
"kpiId": "Fire_Department",
"entryType": "kpi",
"versionId": "20130324101417",
"icon": "",
"kpiCalcMethod": "calculated",
"permissions": [{
  "resourceId": 7,
  "resourceType": "owning-org",
  "identity": "CityWideOperator",
  "identityType": "G",
  "writeAccess": true,
  "id": 640,
  "lastUpdateDate": 1379440645409,
  "messages": []
},
{
  "resourceId": 7,
  "resourceType": "owning-org",
  "identity": "CityWideSupervisor",
  "identityType": "G",
  "writeAccess": true,
  "id": 649,
  "lastUpdateDate": 1379440645409,
  "messages": []
},
{
  "resourceId": 7,
  "resourceType": "owning-org",
  "identity": "wpsadmin",
  "identityType": "U",
  "writeAccess": true,
  "id": 604,
  "lastUpdateDate": 1379440645065,
  "messages": []
},
{
  "resourceId": 7,
  "resourceType": "owning-org",
  "identity": "CityWideExecutive",
  "identityType": "G",
  "writeAccess": true,
  "id": 631,
  "lastUpdateDate": 1379440645393,
  "messages": []
},
{
  "resourceId": 7,
  "resourceType": "owning-org",
  "identity": "wpsadmins",
  "identityType": "G",
  "writeAccess": true,
  "id": 613,
  "lastUpdateDate": 1379440645331,
  "messages": []
},
{
  "resourceId": 7,
```

```
        "resourceType": "owning-org",
        "identity": "CityWideAdmin",
        "identityType": "G",
        "writeAccess": true,
        "id": 622,
        "lastUpdateDate": 1379440645393,
        "messages": []
      }],
      "children": []
    }
  }
```

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 200 | OK | Successful completion |
| 401 | Unauthorized | Not authorized to create the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

11.4 KPIs resource

Use the KPIs resource to get a collection of KPIs. The KPIs are retrieved from the IBM Intelligent Operations Center KPI cache.

11.4.1 Data service class

`com.ibm.ioc.kpi.dataservices.KpiDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

11.4.2 Resource URI

`/ibm/ioc/api/kpi-service/kpi`

11.4.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

11.4.4 GET method

Use the GET method to get one or more KPI resources from the IBM Intelligent Operations Center KPI cache.

Path parameters

| Name | Type | Description |
|------|--------|-------------------------------|
| id | String | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| locale | String | The language locale |
| owningorg | String | The owning organization |
| parent | String | The identifier of the parent KPI that is used to return KPIs that are children of the parent identifier |
| lastupdate | String | String representation of a timestamp that is used to return only those KPIs that have been updates since the <code>lastupdate</code> value |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|-------|------------------------------------------------------------------|
| results | Array | An array of KPIs |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |

KPI Properties:

| Name | Type | Description |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------|
| id | String | Identifier of the KPI in the KPI hierarchy |
| parentId | String | The parent KPI identifier. For top level KPIs that have no parent, the identifier references an owning organization |
| rangeColor | String | The display color RGB value that is used to indicate status in KPI gauges |
| rangeType | String | Range type |
| rangeId | String | The range ID that is used to retrieve the translated range name from the i18n-service |
| rangeName | String | Range name |
| hasChildren | Boolean | Indicates whether or not the KPI has any children |
| dbId | Integer | Database identifier for the entry |
| kpiCalcMethod | String | KPI calculation method |
| name | String | KPI name |
| entryType | String | The KPI hierarchy entry type, for KPIs this value is set to <code>kpi</code> |

Example GET request

The following GET request returns all the KPIs that are defined in the IBM Intelligent Operations Center KPI hierarchy.

`/iibm/ioc/api/kpi-service/kpis`

```
{
  "results": [{
    "parentId": "2a66cf8f-9a3f-46d2-8267-7d1d58206cf2",
    "rangeColor": "#fdb813",
    "rangeType": "actualValue",
    "rangeId": "caution",
    "rangeName": "Caution",
    "hasChildren": false,
    "dbId": 4,
    "kpiCalcMethod": "aggregated",
    "name": "Water Leakage",
    "id": "0518e2e5-1195-4aff-867f-5294e4072344",
    "entryType": "kpi",
    "kpiValue": 150.0
  },
  {
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#8cc63f",
    "rangeType": "actualValue",
    "rangeId": "acceptable",
    "rangeName": "Acceptable",
    "hasChildren": true,
    "dbId": 9,
    "kpiCalcMethod": "calculated",
    "name": "Flood Control",
    "id": "21e133b9-b678-4323-8d8a-e6882b6b04e2",
    "entryType": "kpi",
    "kpiValue": 0.0
  },
  {
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#a91024",
    "rangeType": "actualValue",
    "rangeId": "take_action",
    "rangeName": "Critical",
    "hasChildren": true,
    "dbId": 5,
    "kpiCalcMethod": "calculated",
    "name": "Water Quality",
    "id": "2a038e25-00fb-4a50-8249-06e5f7689fe5",
    "entryType": "kpi",
    "kpiValue": 2.0
  },
  {
    "parentId": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32",
    "rangeColor": "#fdb813",
    "rangeType": "actualValue",
    "rangeId": "caution",
    "rangeName": "Caution",
    "hasChildren": true,
    "dbId": 2,
    "kpiCalcMethod": "calculated",
    "name": "Strategical Planning",
    "id": "2a66cf8f-9a3f-46d2-8267-7d1d58206cf2",
    "entryType": "kpi",
    "kpiValue": 1.0
  }
],
```

```
{
  "parentId": "d80bfff33-2f3b-4fdf-8fd7-e26c756bc182",
  "rangeColor": "#8cc63f",
  "rangeType": "actualValue",
  "rangeId": "acceptable",
  "rangeName": "Acceptable",
  "hasChildren": false,
  "dbId": 12,
  "kpiCalcMethod": "aggregated",
  "name": "Water Level City Lake",
  "id": "3bc8a579-f34c-4aba-878e-3f8815bc94d5",
  "entryType": "kpi",
  "kpiValue": 405.0
},
{
  "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
  "rangeColor": "#fdb813",
  "rangeType": "actualValue",
  "rangeId": "caution",
  "rangeName": "Caution",
  "hasChildren": true,
  "dbId": 1,
  "kpiCalcMethod": "calculated",
  "name": "Water Management",
  "id": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32",
  "entryType": "kpi",
  "kpiValue": 1.0
},
{
  "parentId": "2a66cf8f-9a3f-46d2-8267-7d1d58206cf2",
  "rangeColor": "#8cc63f",
  "rangeType": "actualValue",
  "rangeId": "acceptable",
  "rangeName": "Acceptable",
  "hasChildren": false,
  "dbId": 3,
  "kpiCalcMethod": "aggregated",
  "name": "Water Supply Against Demand",
  "id": "4cc1951f-cafa-43e9-8ae7-92ca53bdf222",
  "entryType": "kpi",
  "kpiValue": 0.0
},
{
  "parentId": "d80bfff33-2f3b-4fdf-8fd7-e26c756bc182",
  "rangeColor": "#8cc63f",
  "rangeType": "actualValue",
  "rangeId": "acceptable",
  "rangeName": "Acceptable",
  "hasChildren": false,
  "dbId": 11,
  "kpiCalcMethod": "aggregated",
  "name": "Flow Discharge City River",
  "id": "571b5a89-02f6-44f2-82bf-4a54a74b9a52",
  "entryType": "kpi",
  "kpiValue": 0.0
},
{
```

```
    "parentId": "e5489a0f-8ee3-455d-8b6d-da0c8dec1e41",
    "rangeColor": "#fdb813",
    "rangeType": "actualValue",
    "rangeId": "caution",
    "rangeName": "Caution",
    "hasChildren": false,
    "dbId": 8,
    "kpiCalcMethod": "aggregated",
    "name": "Turbidity",
    "id": "954679f0-cdce-4cca-8b9d-3bd764bbd3a1",
    "entryType": "kpi",
    "kpiValue": 1.0
  },
  {
    "parentId": "21e133b9-b678-4323-8d8a-e6882b6b04e2",
    "rangeColor": "#8cc63f",
    "rangeType": "actualValue",
    "rangeId": "acceptable",
    "rangeName": "Acceptable",
    "hasChildren": true,
    "dbId": 10,
    "kpiCalcMethod": "calculated",
    "name": "Water Levels",
    "id": "d80bfff33-2f3b-4fdf-8fd7-e26c756bc182",
    "entryType": "kpi",
    "kpiValue": 0.0
  },
  {
    "parentId": "e5489a0f-8ee3-455d-8b6d-da0c8dec1e41",
    "rangeColor": "#a91024",
    "rangeType": "actualValue",
    "rangeId": "take_action",
    "rangeName": "Critical",
    "hasChildren": false,
    "dbId": 7,
    "kpiCalcMethod": "aggregated",
    "name": "pH",
    "id": "e3f8f175-503b-400a-8f3c-941a133441f8",
    "entryType": "kpi",
    "kpiValue": 2.0
  },
  {
    "parentId": "2a038e25-00fb-4a50-8249-06e5f7689fe5",
    "rangeColor": "#a91024",
    "rangeType": "actualValue",
    "rangeId": "take_action",
    "rangeName": "Critical",
    "hasChildren": true,
    "dbId": 6,
    "kpiCalcMethod": "calculated",
    "name": "Physical Indicators",
    "id": "e5489a0f-8ee3-455d-8b6d-da0c8dec1e41",
    "entryType": "kpi",
    "kpiValue": 2.0
  }
],
"lastupdate": 1379253069206
}
```

The following GET request returns the child level KPIs for the owning organization with an identifier of f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41.

/iibm/ioc/api/kpi-service/kpis?owningorg=f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41

```
{
  "results": [{
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#8cc63f",
    "rangeName": "Acceptable",
    "name": "Flood Control",
    "entryType": "kpi",
    "kpiValue": 0.0,
    "rangeType": "actualValue",
    "rangeId": "acceptable",
    "dbId": 27,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "21e133b9-b678-4323-8d8a-e6882b6b04e2"
  },
  {
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#fdb813",
    "rangeName": "Caution",
    "name": "Water Management",
    "entryType": "kpi",
    "kpiValue": 1.0,
    "rangeType": "actualValue",
    "rangeId": "caution",
    "dbId": 36,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32"
  },
  {
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#a91024",
    "rangeName": "Critical",
    "name": "Water Quality",
    "entryType": "kpi",
    "kpiValue": 2.0,
    "rangeType": "actualValue",
    "rangeId": "take_action",
    "dbId": 37,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "2a038e25-00fb-4a50-8249-06e5f7689fe5"
  }
],
  "lastupdate": 1379353219896
}
```

The following GET request returns the child level KPIs for the owning organization with an identifier of f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41. The `locale` query parameter with a value of `de` is used to return the translated German labels for the KPI and range (status) names.

`/iibm/ioc/api/kpi-service/kpis?owningorg=f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41&locale=de`

```
{
  "results": [{
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#8cc63f",
    "rangeName": "Akzeptabel",
    "name": "Hochwasserkontrolle",
    "entryType": "kpi",
    "kpiValue": 0.0,
    "rangeType": "actualValue",
    "rangeId": "acceptable",
    "dbId": 27,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "21e133b9-b678-4323-8d8a-e6882b6b04e2"
  },
  {
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#fdb813",
    "rangeName": "Vorsicht",
    "name": "Wassermanagement",
    "entryType": "kpi",
    "kpiValue": 1.0,
    "rangeType": "actualValue",
    "rangeId": "caution",
    "dbId": 36,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "456ed1bd-d51c-4b79-8dbf-bea2526cfa32"
  },
  {
    "owningOrgId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "parentId": "f6d9aa9b-27f7-46b3-8f5b-8773ccb7ee41",
    "rangeColor": "#a91024",
    "rangeName": "Kritisch",
    "name": "Wasserqualität",
    "entryType": "kpi",
    "kpiValue": 2.0,
    "rangeType": "actualValue",
    "rangeId": "take_action",
    "dbId": 37,
    "hasChildren": true,
    "kpiCalcMethod": "calculated",
    "id": "2a038e25-00fb-4a50-8249-06e5f7689fe5"
  }
],
  "lastupdate": 1379530786150
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

11.5 KPI definition resource

As indicated previously, IBM Intelligent Operations Center uses IBM Business Monitor as its KPI processing engine. While IBM Intelligent Operations Center keeps the KPI values in a cache, the actual KPIs are defined in IBM Business Monitor model applications that are installed on the IBM Business Monitor server. The KPI definition resource acts as a proxy to the IBM Business Monitor KPI Definition REST interface. The resource can be used to forward requests for creating, updating and deleting KPIs to the IBM Business Monitor server. In order to use this resource, you must be familiar with the IBM Business Monitor KPI Definition REST interface. Please consult the IBM Business Monitor Information Center for more information about the REST interface.

11.5.1 Data service class

There is no data service class for this resource.

11.5.2 Resource URI

/ibm/ioc/api/kpi-service/kpi-definition

11.5.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |

11.5.4 GET method

Path parameters

| Name | Type | Description |
|----------------------------------------|--------|----------------------------------------------------------------------------|
| KPI definition | String | URI to obtain KPI configuration information about a KPI |
| KPI definition with value resource URI | String | URI to obtain KPI configuration information and the current value of a KPI |

Use the GET method to get a KPI definition from IBM Business Monitor. The following URIs show the format of the KPI definition and the KPI definition with value resource URIs:

/rest/bpm/monitor/models/{model id}/versions/{version}/kpis/config/{kpi id}

/rest/bpm/monitor/models/{model id}/versions/{version}/kpis/value/{kpi id}

Example GET request

Use the following GET request to get the KPI value and the definition for the "Crime Response Time Precinct One" KPI. To get the KPI definition and the value, you must specify the `model id` path parameter, the `version` path parameter, and the `kpi id` path parameter. For the "Crime Response Time Precinct One" sample KPI, the path parameters have the following values:

- `model id`: `ioc_sample_public_safety_model`
- `version`: `20130324101417`
- `kpi id`: `Crime_Response_Time_Precinct_One`

https://ioc2bvt2sec.rtp.raleigh.ibm.com/ibm/ioc/api/kpi-service/kpi-definition/rest/bpm/monitor/models/ioc_sample_public_safety_model/versions/20130324101417/kpis/value/Crime_Response_Time_Precinct_One

```
{
  "Aggregated Metric MC Name": "Crime Response Time",
  "Aggregated Metric Name": "Response Time",
  "Fixed Period End Localized": null,
  "KPI Display Name": "Crime Response Time Precinct One",
  "FGSKpiHistoryTrackingEnabled": null,
  "Effective End Date": null,
  "FGSKpiPredictionsEnabled": null,
  "Rolling Period Quantity": 7,
  "Fixed Period Start": null,
  "Model ID": "ioc_sample_public_safety_model",
  "Aggregated Function": "avg",
  "Rolling Period Duration": "days",
  "KPI Range Type": "actualValue",
  "Format Currency": null,
  "Repeating Period Timezone": null,
  "Model Display Name": "ioc_sample_public_safety_model",
  "Target Localized": null,
  "Fixed Period Timezone": null,
  "Time Period Method": "rollingPeriod",
  "Aggregated Metric Type": "DURATION",
  "Aggregated Metric MC ID": "Crime_Response_Time",
  "Aggregated Metric ID": "Response_Time",
  "KPI Value Localized": null,
  "Target": null,
  "KPI Value": null,
  "KPI ID": "Crime_Response_Time_Precinct_One",
  "Version": 20130324101417,
  "KPI Context Name": "Police Department KPIs",
  "KPI History Defaults": {
    "History Display Ranges": false,
    "History Granularity": "daily",
    "History Rolling Period Quantity": null,
    "History Repeating Period Basis": "periodInProgress",
    "History Repeating Period Quantity": 2,
    "History Timezone": null,
  }
}
```

```
    "History All Versions": false,
    "History Time Range Method": "repeatingPeriod",
    "History Rolling Period Duration": null,
    "History Repeating Period Duration": "monthly",
    "History Time Range End": null,
    "History Time Range Start": null,
    "History Valid From": null,
    "History Display Target": false
  },
  "Repeating Period Duration": null,
  "Time Period Metric ID": "Start_Date_Time",
  "View Access": "public",
  "KPI Cache Override Interval": null,
  "KPI Description": null,
  "KPI History Granularity Options": [{
    "KPI History Granularity Supported": [{
      "Granularity Value": "hourly"
    }],
    {
      "Granularity Value": "daily"
    }
  ]],
  "KPI History Granularity Hours": 0,
  "KPI History Granularity Default": "hourly"
},
{
  "KPI History Granularity Supported": [{
    "Granularity Value": "hourly"
  }],
  {
    "Granularity Value": "daily"
  }
],
  "KPI History Granularity Hours": 48,
  "KPI History Granularity Default": "daily"
},
{
  "KPI History Granularity Supported": [{
    "Granularity Value": "daily"
  }],
  "KPI History Granularity Hours": 336,
  "KPI History Granularity Default": "daily"
},
{
  "KPI History Granularity Supported": [{
    "Granularity Value": "daily"
  }],
  "KPI History Granularity Hours": 2208,
  "KPI History Granularity Default": "daily"
}],
  "Effective End Date Localized": null,
  "Fixed Period End": null,
  "DisplayFGSIndication": true,
  "Time Period Metric Name": "Start Date Time",
  "KPI Data Type": "duration",
  "Calculated KPI Expression": null,
  "Repeating Period Basis": null,
  "KPI Range Array": [{
    "KPI Range Color": "#8cc63f",
```

```
        "KPI Range Start Value": 0.0,
        "KPI Range Icon": "",
        "KPI Range End Value Localized": "5 m, 0 s",
        "KPI Range Display Name": "acceptable",
        "KPI Range ID": "acceptable",
        "KPI Range End Value": 300000.0,
        "KPI Range Start Value Localized": "0 s"
    },
    {
        "KPI Range Color": "#fdb813",
        "KPI Range Start Value": 300000.0,
        "KPI Range Icon": "",
        "KPI Range End Value Localized": "10 m, 0 s",
        "KPI Range Display Name": "caution",
        "KPI Range ID": "caution",
        "KPI Range End Value": 600000.0,
        "KPI Range Start Value Localized": "5 m, 0 s"
    },
    {
        "KPI Range Color": "#a91024",
        "KPI Range Start Value": 600000.0,
        "KPI Range Icon": "",
        "KPI Range End Value Localized": "1 h, 0 m, 0 s",
        "KPI Range Display Name": "take action",
        "KPI Range ID": "take_action",
        "KPI Range End Value": 3600000.0,
        "KPI Range Start Value Localized": "10 m, 0 s"
    }
  ],
  "Version Aggregation": "allVersions",
  "Enable KPI History": true,
  "History Include Predictions": false,
  "KPI Origin": "modeled",
  "Format Percentage": false,
  "Default Prediction Model ID": null,
  "KPI Metric Filter Array": [{
    "Filter Metric Type": "STRING",
    "Filter Metric Name": "Precinct",
    "Filter Metric ID": "Precinct",
    "Filter Value": ["'One'"],
    "Filter Operator Case Sensitive": false,
    "Filter Operator": "equals",
    "KPI Metric Filter ID": "MF1"
  }],
  "Format Decimal Precision": null,
  "KPI Context ID": "Police_Department_KPIs",
  "Enable KPI Prediction": false,
  "KPI Calc Method": "aggregated",
  "User ID": "",
  "Prediction Model Array": [],
  "FGSSecurityFilterApplied": false
}
```

11.5.5 POST method

Path parameters

| Name | Type | Description |
|----------------|--------|---------------------------------------------------------|
| KPI Definition | String | URI to obtain KPI configuration information about a KPI |

Use the POST method to create a KPI definition in IBM Business Monitor. The following URI shows the format of the KPI definition resource URI:

`/rest/bpm/monitor/models/{model id}/versions/{version}/kpis/config`

Example POST request

The following POST request creates a KPI that is called "New KPI". The KPI is defined in version 20130324101417 of the `ioc_sample_public_safety_model` monitor model.

`/ibm/ioc/api/kpi-service/kpi-definition/rest/bpm/monitor/models/
ioc_sample_public_safety_model/versions/20130324101417/kpis/config`

Request content

```
{  
  "Model ID": "ioc_sample_public_safety_model",  
  "Version": 20130324101417,  
  "KPI Display Name": "New KPI",  
  "KPI Description": "",  
  "KPI Origin": "runtime",  
  "KPI Data Type": "decimal",  
  "KPI Range Type": "actualValue",  
  "KPI Range Array": [{  
    "KPI Range ID": "range_one",  
    "KPI Range Display Name": "range one",  
    "KPI Range Start Value": 0,  
    "KPI Range End Value": 1,  
    "KPI Range Color": "#73bfe5",  
    "KPI Range Icon": null  
  }],  
  "KPI Calc Method": "aggregated",  
  "Aggregated Metric ID": "Budget",  
  "Aggregated Metric MC ID": "Department_Budget",  
  "Aggregated Function": "avg",  
  "Version Aggregation": "allVersions",  
  "User ID": "",  
  "View Access": "personal",  
  "Format Percentage": false,  
  "KPI Cache Override Interval": null,  
  "KPI Metric Filter Array": []  
}
```

11.5.6 PUT method

Use the PUT method to update a KPI definition in IBM Business Monitor. The following URI shows the format of the KPI definition resource URI:

`/rest/bpm/monitor/models/{model id}/versions/{version}/kpis/config/{kpi id}`

Path parameters

| Name | Type | Description |
|----------------|--------|-------------------------------------------------------------------------------------------|
| KPI definition | String | URI to either obtain KPI configuration information, or to create, delete, or update a KPI |

Example PUT request

The following PUT request updates the "New KPI" KPI that was created in the previous POST example. The request content results in the color for range one being changed from #73bfe5 to #8cc6f3.

`/ibm/ioc/api/kpi-service/kpi-definition/rest/bpm/monitor/models/
ioc_sample_public_safety_model/versions/20130324101417/kpis/config/New_x0020_KPI`

Request content

```
{  
  "Aggregated Metric MC Name": "Department Budget",  
  "Aggregated Metric Name": "Budget",  
  "Fixed Period End Localized": null,  
  "KPI Display Name": "New KPI",  
  "FGSKpiHistoryTrackingEnabled": null,  
  "Effective End Date": null,  
  "FGSKpiPredictionsEnabled": null,  
  "Rolling Period Quantity": null,  
  "Fixed Period Start": null,  
  "Model ID": "ioc_sample_public_safety_model",  
  "Aggregated Function": "avg",  
  "Rolling Period Duration": null,  
  "KPI Range Type": "actualValue",  
  "Format Currency": null,  
  "Repeating Period Timezone": null,  
  "Model Display Name": "ioc_sample_public_safety_model",  
  "Target Localized": null,  
  "Fixed Period Timezone": null,  
  "Time Period Method": null,  
  "Aggregated Metric Type": "DECIMAL",  
  "Aggregated Metric MC ID": "Department_Budget",  
  "Aggregated Metric ID": "Budget",  
  "Target": null,  
  "KPI ID": "New_x0020_KPI",  
  "Version": 20130324101417,  
  "KPI Context Name": null,  
  "KPI History Defaults": {  
    "History Display Ranges": false,  
    "History Granularity": "daily",  
    "History Rolling Period Quantity": null,  
  }  
}
```

```
    "History Repeating Period Basis": "periodInProgress",
    "History Repeating Period Quantity": 2,
    "History Timezone": null,
    "History All Versions": false,
    "History Time Range Method": "repeatingPeriod",
    "History Rolling Period Duration": null,
    "History Repeating Period Duration": "monthly",
    "History Time Range End": null,
    "History Time Range Start": null,
    "History Valid From": null,
    "History Display Target": false
  },
  "Repeating Period Duration": null,
  "Time Period Metric ID": null,
  "View Access": "personal",
  "KPI Cache Override Interval": null,
  "KPI Description": "",
  "KPI History Granularity Options": [{
    "KPI History Granularity Supported": [{
      "Granularity Value": "hourly"
    }],
    {
      "Granularity Value": "daily"
    },
    {
      "Granularity Value": "weekly"
    },
    {
      "Granularity Value": "monthly"
    },
    {
      "Granularity Value": "quarterly"
    },
    {
      "Granularity Value": "yearly"
    }
  ]],
  "KPI History Granularity Hours": 0,
  "KPI History Granularity Default": "hourly"
},
{
  "KPI History Granularity Supported": [{
    "Granularity Value": "hourly"
  }],
  {
    "Granularity Value": "daily"
  },
  {
    "Granularity Value": "weekly"
  },
  {
    "Granularity Value": "monthly"
  },
  {
    "Granularity Value": "quarterly"
  },
  {
    "Granularity Value": "yearly"
  }
}
```

```
    },
    "KPI History Granularity Hours": 48,
    "KPI History Granularity Default": "daily"
  },
  {
    "KPI History Granularity Supported": [{
      "Granularity Value": "daily"
    },
    {
      "Granularity Value": "weekly"
    },
    {
      "Granularity Value": "monthly"
    },
    {
      "Granularity Value": "quarterly"
    },
    {
      "Granularity Value": "yearly"
    }
  ],
    "KPI History Granularity Hours": 336,
    "KPI History Granularity Default": "daily"
  },
  {
    "KPI History Granularity Supported": [{
      "Granularity Value": "daily"
    },
    {
      "Granularity Value": "weekly"
    },
    {
      "Granularity Value": "monthly"
    },
    {
      "Granularity Value": "quarterly"
    },
    {
      "Granularity Value": "yearly"
    }
  ],
    "KPI History Granularity Hours": 2208,
    "KPI History Granularity Default": "monthly"
  },
  {
    "KPI History Granularity Supported": [{
      "Granularity Value": "weekly"
    },
    {
      "Granularity Value": "monthly"
    },
    {
      "Granularity Value": "quarterly"
    },
    {
      "Granularity Value": "yearly"
    }
  ],
    "KPI History Granularity Hours": 8784,
    "KPI History Granularity Default": "monthly"
```

```
    },
    "Effective End Date Localized": null,
    "Fixed Period End": null,
    "DisplayFGSIndication": true,
    "Time Period Metric Name": null,
    "KPI Data Type": "decimal",
    "Calculated KPI Expression": null,
    "Repeating Period Basis": null,
    "KPI Range Array": [{
      "KPI Range Color": "#8cc6f3",
      "KPI Range Start Value": 0.0,
      "KPI Range Icon": null,
      "KPI Range End Value Localized": "1",
      "KPI Range Display Name": "range one",
      "KPI Range ID": "range_one",
      "KPI Range End Value": 1.0,
      "KPI Range Start Value Localized": "0"
    }],
    "Version Aggregation": "allVersions",
    "Enable KPI History": true,
    "History Include Predictions": false,
    "KPI Origin": "runtime",
    "Format Percentage": false,
    "Default Prediction Model ID": null,
    "KPI Metric Filter Array": [],
    "Format Decimal Precision": null,
    "KPI Context ID": null,
    "Enable KPI Prediction": false,
    "KPI Calc Method": "aggregated",
    "User ID": "uid&#61;admin,o&#61;defaultWIMFileBasedRealm",
    "Prediction Model Array": [],
    "FGSSecurityFilterApplied": false
  }
}
```

12 Map Settings service

The map settings service gets, creates, updates and deletes map settings. A map setting is a collection of base maps that are defined for a namespace. The IBM Intelligent Operations Center map setting namespace is `DefaultMapSettings_IOC`. A base map definition includes a name, default map indicator, map type, tile server URL, attribution, latitude, longitude, and zoom level.

12.1 Base URI

`/ibm/ioc/api/mapsettings-service`

12.2 Map settings resource

Use the map settings resource to get, create, update, and delete map settings resources for a namespace.

12.2.1 Data service class

com.ibm.ioc.map.MapSettingsService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

12.2.2 Resource URI

/ibm/ioc/api/mapsettings-service/mapsettings

12.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

12.2.4 GET method

Use the GET method to get one or more map setting resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------------|
| id | Integer | The ID of the map settings resource |

Query parameters

| Name | Type | Description |
|-----------|--------|----------------------------|
| locale | String | The language locale |
| namespace | String | The map settings namespace |

Response content

MIME type: application/json

Properties:

| Name | | Type | Description |
|----------------|------|--------------|--------------------------------------------------------------|
| id | | Integer | Resource ID |
| namespace | | String | Map settings namespace |
| lastUpdateDate | | Long | Timestamp that indicates when the resource was last updated |
| messages | | String array | List of messages that are optionally returned by the service |
| baseMaps | | Array | A collection of base maps |
| location | | | |
| | lon | String | Longitude of the default base map |
| | lat | String | Latitude of the default base map |
| | Zoom | Integer | Zoom level of the default base map |

baseMaps properties:

| Name | | Type | Description |
|---------------|-------|---------|-----------------------------------------------------------------------------------------------|
| name | | String | i18n-service resource properties that are used for getting the map name from the i18n-service |
| | group | String | Group name |
| | key | String | The resource key |
| defaultMap | | Boolean | Indicates whether the map is the default map |
| url | | String | Map tile server URL |
| mapType | | String | Map type, valid values are XYZ, OpenStreetMap, Google |
| googleMapType | | String | Google map type |
| attribution | | String | Provider attribution |

Sample response content

```
{
  "baseMaps": [{
    "name": {
      "group": "MapSettings",
      "locale": null,
      "key": "i18n_2d1fd972-828c-44b4-87bb-0f8a19558b23",
      "value": null,
      "id": null,
      "lastUpdateDate": null,
      "messages": []
    },
    "defaultMap": true,
    "url": "http://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer/tile/${z}/${y}/${x}",
    "mapType": "XYZ",
    "googleMapType": "STREET",
    "attribution": ""
  }],
}
```

```
"location": {
  "lon": "-93.19770812988718",
  "lat": "44.984713498441195",
  "zoom": 12
},
"namespace": "DefaultMapSettings_IOC",
"id": 35,
"lastUpdateDate": 1374414507642,
"messages": []
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

12.2.5 POST method

Use the POST method to create a map settings resource.

Request content

MIME type: application/json

Parameters:

| Name | | Type | Description |
|-----------|------|--------------|--------------------------------------------------------------|
| namespace | | String | Map settings namespace |
| messages | | String array | List of messages that are optionally returned by the service |
| baseMaps | | Array | A collection of base maps |
| location | | | |
| | lon | String | Longitude of the default base map |
| | lat | String | Latitude of the default base map |
| | Zoom | Integer | Zoom level of the default base map |

baseMaps parameters:

| Name | | Type | Description |
|---------------|-------|---------|--------------------------------------------------------------------------------------|
| name | | String | i18n-service resource properties used for getting the map name from the i18n-service |
| | group | String | Group name |
| | key | String | The resource key |
| defaultMap | | Boolean | Indicates whether the map is the default map |
| url | | String | Map tile server URL |
| mapType | | String | Map type, valid values are XYZ, OpenStreetMap, Google |
| googleMapType | | String | Google map type |
| attribution | | String | Provider attribution |

Sample POST request content

```
{
  "baseMaps": [{
    "name": {
      "group": "MapSettings",
      "key": "i18n_2d1fd972-828c-44b4-87bb-0f8a19558b23"
    },
    "defaultMap": true,
    "url":
"http://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/MapServer/tile/${z}/${y}/${x}",
    "mapType": "XYZ"
  }],
  "location": {
    "lon": "-93.19770812988718",
    "lat": "44.984713498441195",
    "zoom": 12
  },
  "namespace": "Sample"
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

12.2.6 PUT method

Use the PUT method to update a map settings resource. Use the PUT method to add, update and remove base maps that are used by IBM Intelligent Operations Center map functions.

Path parameters

| Name | Type | Description |
|------|---------|-----------------------------------------------|
| id | Integer | The ID of the map settings resource to update |

Request content

MIME type: application/json

Parameters:

| Name | | Type | Description |
|----------------|---------------|---------|-----------------------------------------------------------------------------------------------|
| id | | Integer | Resource ID |
| namespace | | String | Map settings namespace |
| lastUpdateDate | | Long | Timestamp that indicates when the resource was last updated |
| baseMaps | | Array | A collection of base maps |
| | name | | i18n-service resource properties that are used for getting the map name from the i18n-service |
| | | group | Group name |
| | | key | The resource key |
| | defaultMap | Boolean | |
| | url | String | Map tile server URL |
| | mapType | String | Map type, valid values are XYZ, OpenStreetMap, Google) |
| | googleMapType | String | Google map type |
| | attribution | String | Provider attribution |

| Name | | | Type | Description |
|----------|------|--|---------|------------------------------------|
| location | | | | |
| | lon | | String | Longitude of the default base map |
| | lat | | String | Latitude of the default base map |
| | Zoom | | Integer | Zoom level of the default base map |

Sample PUT request content – update base map zoom level

```
{
  "baseMaps": [{
    "name": {
      "group": "MapSettings",
      "key": "i18n_2d1fd972-828c-44b4-87bb-0f8a19558b23"
    },
    "defaultMap": true,
    "url":
"http://services.arcgisonline.com/ArcGIS/rest/services/World_Street_Map/M
apServer/tile/${z}/${y}/${x}",
    "mapType": "XYZ"
  }],
  "location": {
    "lon": "-93.19770812988718",
    "lat": "44.984713498441195",
    "zoom": 12
  },
  "namespace": "DefaultMapSettings_IOC",
  "id": 76,
  "lastUpdateDate": 1374423718191
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

12.2.7 DELETE method

Use the POST method to delete a map settings resource.

Path parameters

| Name | Type | Description |
|------|---------|-----------------------------------------------|
| id | Integer | The ID of the map settings resource to delete |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

13 Notifications service

Use the notifications service to access notifications. Notifications can display alerts about events that are relevant to IBM Intelligent Operation Center users. Notifications are displayed in the Notifications window by clicking the Notification menu button that is at the top of IBM Intelligent Operation Center views.

13.1 Base URI

/ibm/ioc/api/notification-service

13.2 Notifications resource

Use the notifications resource to get, create, update, and delete notifications.

13.2.1 Data service class

com.ibm.ioc.notification.NotificationDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

13.2.2 Resource URI

/ibm/ioc/api/notification-service/notifications

13.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | Yes | Yes |
| PUT | Yes | Yes |
| DELETE | Yes | Yes |

13.2.4 GET method

Use the GET method to get one or more notifications resources.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|----------|--------|---------------------|
| locale | String | The language locale |
| timeZone | String | Timezone |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|------------------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| category | String | Notification |
| sentTimestamp | String | Date and time that the notification was sent |
| sentFrom | String | The notification sender |
| sentToUsers | Array | A list of users that the notification was sent to |
| headline | String | Notification headline |
| headlineLabel | String | Group and key reference for the translation REST service. If omitted, the headline property is used as the headline |
| headlineParams | Array | A list of group and key references to be substituted into <code>headlineLabel</code> |
| description | String | Notification description |
| sentToGroups | String array | A list of groups that the notification was sent to |
| formattedSentTimestamp | String | Formatted string that contains the date and time that the notification was sent |
| lastUpdateDate | Long | Timestamp that indicates when the resource was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "category": null,
  "sentTimestamp": "2013-10-10 11:05:57.0",
  "sentFrom": null,
  "sentToUsers": ["wpsadmin"],
  "headline": "Crime Response Time KPI status changed",
  "headlineLabel":
  "{\"group\":\"KPI\",\"key\":\"kpiChangedNotificationHeadline\"}",
  "headlineParams":
  "[{\"group\":\"KPI\",\"key\":\"Crime_Response_Time\"}]",
  "description": "Crime Response Time KPI Status Changed from
kpi.RANGE.UNDETERMINED to acceptable",
  "sentToGroups": ["CityWideAdmin",
  "CityWideOperator",
  "CityWideSupervisor",
  "CityWideExecutive",
  "wpsadmins"],
  "formattedSentTimestamp": "Oct 10, 2013, 3:05:57 PM",
  "id": 22,
  "lastUpdateDate": 1381417557448,
  "messages": []
},
{
  "category": null,
  "sentTimestamp": "2013-10-10 11:05:57.0",
  "sentFrom": null,
  "sentToUsers": ["wpsadmin"],
  "headline": "Crime Response Time Precinct One KPI status changed",
  "headlineLabel":
  "{\"group\":\"KPI\",\"key\":\"kpiChangedNotificationHeadline\"}",
  "headlineParams":
  "[{\"group\":\"KPI\",\"key\":\"Crime_Response_Time_Precinct_One\"}]",
  "description": "Crime Response Time Precinct One KPI Status Changed
from kpi.RANGE.UNDETERMINED to acceptable",
  "sentToGroups": ["CityWideAdmin",
  "CityWideOperator",
  "CityWideSupervisor",
  "CityWideExecutive",
  "wpsadmins"],
  "formattedSentTimestamp": "Oct 10, 2013, 3:05:57 PM",
  "id": 23,
  "lastUpdateDate": 1381417557599,
  "messages": []
},
{
  "category": null,
  "sentTimestamp": "2013-10-10 11:10:58.0",
  "sentFrom": null,
  "sentToUsers": ["wpsadmin"],
  "headline": "Crime Response Time Precinct Two KPI status changed",
  "headlineLabel":
  "{\"group\":\"KPI\",\"key\":\"kpiChangedNotificationHeadline\"}",
  "headlineParams":
  "[{\"group\":\"KPI\",\"key\":\"Crime_Response_Time_Precinct_Two\"}]",
```

```
    "description": "Crime Response Time Precinct Two KPI Status Changed  
from kpi.RANGE.UNDETERMINED to acceptable",  
    "sentToGroups": ["CityWideAdmin",  
    "CityWideOperator",  
    "CityWideSupervisor",  
    "CityWideExecutive",  
    "wpsadmins"],  
    "formattedSentTimestamp": "Oct 10, 2013, 3:10:58 PM",  
    "id": 24,  
    "lastUpdateDate": 1381417858226,  
    "messages": []  
  }  
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

13.2.5 POST method

Use the POST method to create a notifications resource.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|------------------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| category | String | Notification |
| sentTimestamp | String | Date and time that the notification was sent |
| sentFrom | String | The notification sender |
| sentToUsers | Array | A list of users that the notification was sent to |
| headline | String | Notification headline |
| headlineLabel | String | Group and key reference for the translation REST service. If omitted, the headline property is used as the headline |
| headlineParams | Array | A list of group and key references to be substituted into <code>headlineLabel</code> |
| description | String | Notification description |
| sentToGroups | String array | A list of groups that the notification was sent to |
| formattedSentTimestamp | String | Formatted string that contains the date and time that the notification was sent |

Sample POST request content

```
{
  "category": null,
  "sentFrom": null,
  "sentToUsers": ["wpsadmin"],
  "headline": "Crime Response Time Precinct Two KPI status changed",
  "headlineLabel":
  "{\\"group\\":\\"KPI\\",\\"key\\":\\"kpiChangedNotificationHeadline\\"}",
  "headlineParams":
  "[{\\"group\\":\\"KPI\\",\\"key\\":\\"Crime_Response_Time_Precinct_Two\\"}]",
  "description": "Crime Response Time Precinct Two KPI Status Changed
  from kpi.RANGE.UNDETERMINED to acceptable",
  "sentToGroups": ["CityWideAdmin",
  "CityWideOperator",
  "CityWideSupervisor",
  "CityWideExecutive",
  "wpsadmins"]
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

13.2.6 PUT method

Use the PUT method to update a notifications resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 409 | Conflict | The resource cannot be updated because the lastUpdateDate value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

13.2.7 DELETE method

Use the DELETE method to delete a notifications resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

14 Security service

The security service returns user and group information. This service uses the WebSphere Portal Server PUMA API to obtain the user and group information. The user information is a subset of the information that is contained in the user profile.

14.1 Base URI

/ibm/ioc/api/security-service

14.2 Groups resource

Use the GET method to get a list of IBM Intelligent Operation Center user groups.

14.2.1 Data service class

`com.ibm.ioc.security.GroupDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

14.2.2 Resource URI

`/ibm/ioc/api/security-service/groups`

14.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

14.2.4 GET method

Use the GET method to get a list of IBM Intelligent Operation Center user groups.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------------------------------------------------|
| locale | String | The language locale |
| uid | String | User ID that is used to get the groups that a user belongs to |

Response content

MIME type: `application/json`

| Name | Type | Description |
|------|--------|-------------|
| Name | String | Group name |

Sample response content

```
[{
  "name": "CityWideSupervisor"
},
{
  "name": "CityWideOperator"
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

14.3 Users resource

Use the users resource to return a list of IBM Intelligent Operations Center users.

14.3.1 Data service class

com.ibm.ioc.security.UserDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

14.3.2 Resource URI

/ibm/ioc/api/security-service/users

14.3.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

14.3.4 GET method

Use the GET method to get a list of IBM Intelligent Operation Center users.

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |
| uid | String | User ID |

Response content

MIME type: application/json

| Name | Type | Description |
|---------------------------|---------|-----------------------------------------------------------------------------------------------------------|
| uid | String | User ID |
| preferredLanguage | String | User's preferred language |
| timeZone | String | User's preferred time zone |
| notificationsDisplayLimit | Integer | User's notification display limit that specifies the number of days for which a notification is displayed |

Sample response content

```
[{
  "uid": "ballen",
  "preferredLanguage": "en_US",
  "timeZone": "America/New_York",
  "notificationsDisplayLimit": 3
},
{
  "uid": "tdelorne",
  "preferredLanguage": "en_US",
  "timeZone": "America/New_York",
  "notificationsDisplayLimit": 3
},
{
  "uid": "scollins",
  "preferredLanguage": "en_US",
  "timeZone": "America/New_York",
  "notificationsDisplayLimit": 3
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

15 Session service

Use the session service to save settings that are relevant to IBM Intelligent Operations Center users across sessions. The different IBM Intelligent Operations Center components track changes that a user makes to the user interface and various other settings, and persists the changes.

15.1 Base URI

/ibm/ioc/api/session-service

15.2 Session settings resource

Use the session settings resource to get, create, update, and delete session settings for individual users.

15.2.1 Data service class

com.ibm.ioc.session.SessionDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

15.2.2 Resource URI

/ibm/ioc/api/session-service/sessionsettings

15.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | Yes | Yes |
| PUT | Yes | Yes |
| DELETE | Yes | Yes |

15.2.4 GET method

Use the GET method to get one or more session settings resources for the authorized user that is passed in the request.

Path parameters

| Name | Type | Description |
|------|---------|-------------------------------|
| id | Integer | The ID of the resource to get |

Query parameters

| Name | Type | Description |
|-----------|--------|---------------------------------------------------------------------------------------|
| locale | String | The language locale |
| type | String | If set to the value <code>all</code> , the session settings for all users is returned |
| namespace | String | The unique namespace that the settings are associated with |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|-----------------------------------------------------------------------|
| id | Integer | Resource ID |
| uid | String | User ID to set settings for |
| namespace | String | The unique namespace to associate the settings with |
| settings | JSON Object | The JSON representation in name-value pairs of the settings to update |
| lastUpdateDate | Long | Timestamp that indicates when the setting was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "uid": "wpsadmin",
  "namespace": "ns_Z7_291AHBS0I8G8F0AGCRGISK10G6_",
  "settings": {
    "dateTimeTabId": "ns_Z7_291AHBS0I8G8F0AGCRGISK10G6__ranges",
    "selectedItem": {
      "id": 21
    }
  },
  "id": 3,
  "lastUpdateDate": 1380030853880,
  "messages": []
},
{
  "uid": "wpsadmin",
  "namespace": "StandardTheme",
  "settings": {
    "bottomPanel_open": false,
    "leadingPanel_style": "width: 285px; height: 100%; overflow:
auto;",
    "trailingPanel_open": false,
    "trailingPanel": true,
    "bottomPanel": true,
    "trailingPanel_style": "width: 20%; height: 100%; overflow:
auto;",
    "bottomPanel_style": "width: 100%; height: 15%; overflow:
auto;",
    "leadingPanel_open": true,
    "leadingPanel": true
  },
  "id": 6,
  "lastUpdateDate": 1380030832177,
  "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

15.2.5 POST method

Use the POST method to create a session settings resource.

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|-----------|-------------|-----------------------------------------------------|
| uid | String | The user ID to associate the settings with |
| namespace | String | The unique namespace to associate the settings with |
| settings | JSON Object | The settings to save, formatted as name-value pairs |

Sample POST request content

```
{
  "uid": "ballen",
  "namespace": "sample_namespace",
  "settings": {
    "selectedItem": {
      "id": 35
    }
  }
}
```

Response content

MIME type: application/json

If the POST request is successful, the resource is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

15.2.6 PUT method

Use the PUT method to update a session settings resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be updated |

Request content

MIME type: application/json

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

15.2.7 DELETE method

Use the DELETE method to delete a session settings resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the resource to be deleted |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

16 Spatial service

The spatial service provides access to the spatial-temporal data items that are stored in IBM Intelligent Operations Center as a result of creating a data source definition. The items that are provided by this service are displayed on the map, on the location map, and in the list user interface components.

16.1 Base URI

/ibm/ioc/api/spatial-service

16.2 Collections resource

Use the collections resource to return all the properties of a data item for a given data source.

16.2.1 Data service class

com.ibm.ioc.stat.service.RecordsDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

16.2.2 Resource URI

/ibm/ioc/api/spatial-service/collections/{datasourceId}/records/{recordId}

16.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

16.2.4 GET method

Use the GET method to get all the properties of a data item for the specified data source and the authorized user that are passed in the request.

Path parameters

| Name | Type | Description |
|--------------|---------|----------------------------------------------------------|
| datasourceId | Integer | The ID of the data source to retrieve the data item from |
| recordId | Integer | The ID of the data item to retrieve |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------|
| locale | String | The language locale |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|--------------------|--------------|-------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| deleteFlag | Boolean | Indicates whether or not the data item has been canceled |
| name | String | Locale translated user interface label for the column name, generated by the server |
| annotationId | Integer | Annotation ID |
| classification | Integer | Classification |
| description | String | Description |
| assessmentDateTime | Object | Assessment date time |
| startDateTime | Object | Data item start date time |
| endDateTime | Object | Data item end date time |
| lastUpdateDate | Long | Timestamp that indicates when the authorization was last updated |
| timeZoneOffset | Integer | Time zone offset in minutes |
| geometry | String | Geospatial location information WKT format |
| lastUpdateDateTime | Object | Data item last update date and time |
| fullProperties | Array | A collection of data item property values |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
{
  "id": 2346,
  {
    "id": 2346,
    "annotationId": 0,
    "assessmentDateTime": null,
    "classification": null,
    "deleteFlag": false,
    "description": null,
    "endDateTime": {
      "text": "Oct 10, 2013 12:13:26 PM",
      "value": 1381421606000
    },
    "geometry": "POINT (-93.3370114 45.0224308)",
    "lastUpdateDate": 1381421788789,
    "name": "Record One",
    "startDateTime": {
      "text": "Oct 10, 2013 12:13:26 PM",
      "value": 1381421606000
    },
    "tenantId": 0,
    "timeZoneOffset": -240,
    "fullProperties": [{
      "name": "EndDay",
      "value": "10"
    }],
  },
}
```

```
{
  {
    "name": "EndDayOfWeek",
    "value": "5"
  },
  {
    "name": "EndHour",
    "value": "16"
  },
  {
    "name": "EndMonth",
    "value": "10"
  },
  {
    "name": "EndYear",
    "value": "2013"
  },
  {
    "name": "Property_1",
    "value": "101 South Street"
  },
  {
    "name": "Property_2",
    "value": "Record one description"
  },
  {
    "name": "Property_3",
    "value": "1"
  },
  {
    "name": "StartDay",
    "value": "10"
  },
  {
    "name": "StartDayOfWeek",
    "value": "5"
  },
  {
    "name": "StartHour",
    "value": "16"
  },
  {
    "name": "StartMonth",
    "value": "10"
  },
  {
    "name": "StartYear",
    "value": "2013"
  }
],
"lastUpdateDateTime": {
  "text": "Oct 10, 2013 12:16:28 PM",
  "value": 1381421788789
},
"messages": []
}
"assessmentDateTime": null,
"classification": null,
"deleteFlag": false,
"description": null,
```

```
"endTime": {
  "text": "Oct 10, 2013 12:13:26 PM",
  "value": 1381421606000
},
"geometry": "POINT (-93.3370114 45.0224308)",
"lastUpdateDate": 1381421788789,
"name": "Record One",
"startTime": {
  "text": "Oct 10, 2013 12:13:26 PM",
  "value": 1381421606000
},

"timeZoneOffset": -240,
"fullProperties": [{
  "name": "EndDay",
  "value": "10"
},
{
  "name": "EndDayOfWeek",
  "value": "5"
},
{
  "name": "EndHour",
  "value": "16"
},
{
  "name": "EndMonth",
  "value": "10"
},
{
  "name": "EndYear",
  "value": "2013"
},
{
  "name": "Property_1",
  "value": "101 South Street"
},
{
  "name": "Property_2",
  "value": "Record one description"
},
{
  "name": "Property_3",
  "value": "1"
},
{
  "name": "StartDay",
  "value": "10"
},
{
  "name": "StartDayOfWeek",
  "value": "5"
},
{
  "name": "StartHour",
  "value": "16"
},
},
```

```
{
  {
    "name": "StartMonth",
    "value": "10"
  },
  {
    "name": "StartYear",
    "value": "2013"
  }
},
"lastUpdateDateTime": {
  "text": "Oct 10, 2013 12:16:28 PM",
  "value": 1381421788789
},
"messages": []
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 204 | No content | Returned when the data item cannot be found |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

16.3 Features resource

The features resource returns a collection of data items for a given data source within a given geospatial boundary. Each data item in the collection includes the minimum and key properties that are defined for the data source. You can use optional query parameters to define additional filter criteria such as start, end, and last update time, and to filter out data items that have been cancelled.

16.3.1 Resource URI

/ibm/ioc/api/spatial-service/features/{datasourceId}

16.3.2 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |

16.3.3 GET method

Use the GET method to get one or more data items for the data source and the authorized user that are specified in the request.

Header parameters

| Name | Type | Description |
|---------------|---------|---------------------------------------------------------------|
| User-TimeZone | Integer | Required header that indicates the timezone offset in minutes |

Path parameters

| Name | Type | Description |
|--------------|---------|----------------------------------------------------|
| datasourceId | Integer | The ID of the data source to run the query against |

Query parameters

| Name | Type | Description | | | | | | | | | | | | | | | | | | |
|-------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------|-------|---------------|-----------------|------------------------------------|-------------|-----------------|------------------------------------|--------------------|-----------------|------------------------------------|------------|---|---------------------------------------------------------------------------------|-------------------------------------|--|--|
| locale | String | The language locale | | | | | | | | | | | | | | | | | | |
| boundaries | String | The geospatial boundary of the query specified in well-known text (WKT) format | | | | | | | | | | | | | | | | | | |
| buffer | Double | The number of kilometers that the geospatial boundary (boundaries parameter) is expanded before running the query | | | | | | | | | | | | | | | | | | |
| criterion | String | Additional filter criteria that use the following keys: <table><tr><th>Key</th><th>Operator</th><th>Value</th></tr><tr><td>startDateTime</td><td>=, >, <, >=, <=</td><td>ISO 8601 formatted date time value</td></tr><tr><td>endDateTime</td><td>=, >, <, >=, <=</td><td>ISO 8601 formatted date time value</td></tr><tr><td>lastUpdateDateTime</td><td>=, >, <, >=, <=</td><td>ISO 8601 formatted date time value</td></tr><tr><td>deleteFlag</td><td>=</td><td>0 or 1 Indicates whether to include canceled data items in the query results</td></tr><tr><td>Minimum, key, or full property name</td><td></td><td></td></tr></table> | Key | Operator | Value | startDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | endDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | lastUpdateDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | deleteFlag | = | 0 or 1 Indicates whether to include canceled data items in the query results | Minimum, key, or full property name | | |
| Key | Operator | Value | | | | | | | | | | | | | | | | | | |
| startDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | | | | | | | | | | | | | | | | | | |
| endDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | | | | | | | | | | | | | | | | | | |
| lastUpdateDateTime | =, >, <, >=, <= | ISO 8601 formatted date time value | | | | | | | | | | | | | | | | | | |
| deleteFlag | = | 0 or 1 Indicates whether to include canceled data items in the query results | | | | | | | | | | | | | | | | | | |
| Minimum, key, or full property name | | | | | | | | | | | | | | | | | | | | |
| onlyOn | String | JSON string that represents a range or a holiday as defined by using the filter panel configuration tool, and returned by the filter-service holidays resource | | | | | | | | | | | | | | | | | | |

Response header

| Name | Type | Description |
|--------------|------|------------------------------------------------------------------|
| Last-Updated | Long | Timestamp that indicates when the authorization was last updated |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|----------------|--------------|---------------------------------------------------------------|
| id | Integer | Data source ID |
| type | String | Collection type |
| features | Array | Array of data items that are returned by the query |
| lastUpdateDate | Long | Timestamp that indicates when the collection was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Features Properties

| Name | | Type | Description |
|------------|-------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id | | String | String representation of the <code>ObjectId</code> minimum property |
| fid | | String | String representation of the <code>ObjectId</code> minimum property |
| type | | String | Data item type |
| deleted | | Boolean | Indicates whether the data item has been canceled |
| geometry | | Object | Geospatial location information in GeoJSON format |
| | type | String | Geospatial type, for example, <code>Point</code> or <code>LineString</code> |
| | coordinates | Array | Collection of longitude and latitude values |
| properties | | Object | An object that contains the minimum and key properties. The object always includes the following properties: DATASOURCEID TenantId Classification AnnotationId Name TimeZoneOffset EndDateTime DeleteFlag ObjectId LastUpdateDateTime AssessmentDateTime StartDateTime Description |

Example GET requests

GET request with boundaries parameter:

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987 44.993394035384675))
```

GET request with boundaries and the Name minimum property as a criterion parameter:

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987  
44.993394035384675))&criterion=Name=Camera1
```

GET request with boundaries and buffer parameters:

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987 44.993394035384675))&buffer=3
```

GET request with boundaries, and startDateTime and endDateTime criterion parameters:

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987  
44.993394035384675))&criterion=startDateTime>=2013-01-01T00:00:00-  
04:00&criterion=startDateTime<=2013-08-12T23:59:00-04:00
```

GET request with boundaries and deleteFlag criterion parameters:

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987  
44.993394035384675))&criterion=deleteFlag=0
```

GET request with boundaries, startDateTime and endDateTime criterion parameters, and onlyOn parameters

```
https://localhost:10029/ibm/ioc/api/spatial-  
service/features/6?boundaries=POLYGON((-93.41631889341987  
44.993394035384675,-93.26542854307203 44.993394035384675,-  
93.26542854307203 45.06497345935277,-93.41631889341987  
45.06497345935277,-93.41631889341987  
44.993394035384675))&criterion=startDateTime>=2013-01-01T00:00:00-  
04:00&criterion=startDateTime<=2013-08-12T23:59:00-  
04:00&onlyOn={"label":{"group":"FilterPanel","key":"i18n_27c61a2e-  
3311-4559-8428-  
e0463aa628c0"},"i18nLabel":"Thanksgiving","every":11,"number":4,"unit":  
[5],"id":1,"lastUpdateDate":1375757478551,"messages":[],"type":"holiday"}
```

Sample response content

```
{
  "type": "FeatureCollection",
  "id": 32,
  "lastUpdateDate": 1381527314325,
  "features": [{
    "type": "Feature",
    "id": 2346,
    "fid": 2346,
    "deleted": false,
    "geometry": {
      "type": "Point",
      "coordinates": [-93.3370114,
        45.0224308]
    },
    "properties": {
      "DatasourceId": 32,
      "TenantId": null,
      "Classification": null,
      "Property_2": "Record one description",
      "AnnotationId": null,
      "Name": "Record One",
      "TimeZoneOffset": -240,
      "EndDateTime": {
        "text": "Oct 10, 2013 12:13:26 PM",
        "value": 1381421606000
      },
      "DeleteFlag": 0,
      "LastUpdateDateTime": {
        "text": "Oct 10, 2013 12:16:28 PM",
        "value": 1381421788789
      },
      "ObjectId": 2346,
      "Description": null,
      "StartDateTime": {
        "text": "Oct 10, 2013 12:13:26 PM",
        "value": 1381421606000
      },
      "AssessmentDateTime": null
    }
  },
  {
    "type": "Feature",
    "id": 2354,
    "fid": 2354,
    "deleted": false,
    "geometry": {
      "type": "Point",
      "coordinates": [-93.3614731,
        45.005229]
    },
    "properties": {
      "DatasourceId": 32,
      "TenantId": null,
      "Classification": null,
      "Property_2": "Record two description",
```

```
        "AnnotationId": null,
        "Name": "Record two",
        "TimeZoneOffset": 0,
        "EndDateTime": {
            "text": "Jul 21, 2013 9:30:00 PM",
            "value": 1374456600901
        },
        "DeleteFlag": 0,
        "LastUpdateDateTime": {
            "text": "Oct 10, 2013 2:21:27 PM",
            "value": 1381429287191
        },
        "ObjectId": 2354,
        "Description": null,
        "StartDateTime": {
            "text": "Jul 21, 2013 9:30:00 PM",
            "value": 1374456600909
        },
        "AssessmentDateTime": null
    },
    {
        "type": "Feature",
        "id": 2353,
        "fid": 2353,
        "deleted": false,
        "geometry": {
            "type": "Point",
            "coordinates": [-93.3614731,
                45.005229]
        },
        "properties": {
            "DatasourceId": 32,
            "TenantId": null,
            "Classification": null,
            "Property_2": "Record three description",
            "AnnotationId": null,
            "Name": "Record three",
            "TimeZoneOffset": 0,
            "EndDateTime": {
                "text": "Jul 21, 2013 9:30:00 PM",
                "value": 1374456600616
            },
            "DeleteFlag": 0,
            "LastUpdateDateTime": {
                "text": "Oct 10, 2013 2:22:03 PM",
                "value": 1381429323478
            },
            "ObjectId": 2353,
            "Description": null,
            "StartDateTime": {
                "text": "Jul 21, 2013 9:30:00 PM",
                "value": 1374456600619
            },
            "AssessmentDateTime": null
        }
    },
    ],
}
```

```
"messages": []  
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17 Standard operating procedure service

The standard operating procedure (SOP) service provides access to SOP resources in IBM Intelligent Operations Center. You can use the service to define SOPs, activities, and resources, to approve and launch SOPs, and to start, stop, and complete activities.

17.1 Security

Access to the IBM Intelligent Operation Center REST services is restricted to authorized IBM Intelligent Operation Center users. Additional restrictions are added to the SOP resources that are based on the requesting user's SOP role. The IBM Intelligent Operations Center defines three SOP roles, an SOP administrator, an SOP author, and a reference librarian. The users and groups who are assigned to the roles are defined in three system properties, which are `SopAdminRoles`, `SopAuthorRoles` and `ReferenceLibrarianRoles`. An SOP author can also grant other users and groups access to an SOP and the SOP's activities. The following table summarizes the access restrictions that apply to SOP resources.

| Access | Role |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Create an SOP | Users who are listed in either the <code>SopAdminRoles</code> system property, or in the <code>SopAuthorRoles</code> system property. |
| Get an SOP definition | Users who are listed in either the <code>SopAdminRoles</code> system property, or in the <code>SopAuthorRoles</code> system property. Any role that is granted read access either by the creator, or by an editor of the definition. |
| Update or delete an SOP definition | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted read access in the SOP definition, either by the creator or by an editor. Any role that is granted read access in the activity definition, either by the creator or by an editor. |

| Access | Role |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Launch an instance of an SOP | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted write access in the SOP definition, either by the creator or by an editor. |
| Get an instance of an SOP | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted read access in the SOP definition, either by the creator or by an editor. Any role that is granted read access in the activity definition, either by the creator or by an editor. |
| Update or delete an instance of an SOP | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted write access in the SOP definition, either by the creator or by an editor. Any role that is granted write access in the activity definition, either by the creator or by an editor. |
| Get the details for an activity | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted read access in the SOP definition, either by the creator or by an editor. Any role that is granted read access in the activity definition, either by the creator or by an editor. |
| Update an activity | Users who are listed in the <code>SopAdminRoles</code> system property. Any role that is granted write access in the SOP definition, either by the creator or by an editor. Any role that is granted write access in the activity definition, either by the creator or by an editor. |
| Create references in the library | Users who are listed in the following system properties: <code>ReferenceLibrarianRoles</code> , <code>SopAdminRoles</code> , <code>SopAuthorRoles</code> Note: Only <code>ReferenceLibrarianRoles</code> users can create shared references. |
| Edit and delete references in the library | Users who are listed in the <code>ReferenceLibrarianRoles</code> system property. Users who are listed in the <code>SopAdminRoles</code> system property and the <code>SopAuthorRoles</code> system property can edit and delete only references that they have created. |

17.2 Base URI

/ibm/ioc/api/sop-service

17.3 Reference resource

Use the reference resource to get, create, update, and delete references.

17.3.1 Data service class

There is no data service class for this resource.

17.3.2 Resource URI

/ibm/ioc/api/sop-service/reference

17.3.3 Supported HTTP methods

| Method | Authorized users | Reference librarian | SOP administrator | SOP author |
|--------|------------------|---------------------|-------------------|------------|
| GET | Yes | Yes | Yes | Yes |
| PUT | No | Yes | Yes | Yes |
| DELETE | No | Yes | Yes | Yes |

17.3.4 GET method

Use the GET method to get one or more references.

Path parameters

| Name | Type | Description |
|---------------|---------|-----------------------------------------|
| REFERENCE_UID | Integer | The ID of the reference resource to get |

Query parameters

| Name | Type | Description |
|-----------------|---------|----------------------------------------------------------------------------------------------------|
| includeArchived | Boolean | Indicates whether or not archived references should be included in the results. Defaults to false. |
| includePrivate | Boolean | Indicates whether or not private references should be included in the results. Defaults to false. |
| Name | String | Used to specify the name of the reference to be returned in the result. |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|-------------|---------|--------------------------------------------------------------------------------------------------------|
| uid | Integer | ID for use in querying this reference |
| archived | Boolean | Reference is still retained in the database but is deprecated and should not be used in new references |
| author | String | Reference creator |
| description | String | User-supplied reference description |
| name | String | User-supplied reference name |
| priv | Boolean | Indicates whether the reference is publically visible |
| url | String | URL of referenced website |

Sample response content

```
[
  {
    "uid": 367,
    "archived": false,
    "description": "NOTIFICATION",
    "name": "Fire Website",
    "priv": false,
    "uri": "http://www.firesafety.org"
  },
  {
    "uid": 202,
    "archived": false,
    "author": "wpsadmin",
    "description": "News Source",
    "name": "RTE News",
    "priv": false,
    "uri": "http://www.rte.ie/news"
  }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty. |
| 401 | Unauthorized | Not authorized to get the resource. |
| 500 | Internal server error | An error occurred while the request was being processed. |

17.3.5 PUT method

Use the PUT method to create and update a reference. When you use the PUT method to create a reference, you must specify a value of 0 for the `uid` path parameter and set the

`uid` property in the request content to 0. The `uid` that is returned in the response is the `uid` of the newly created reference resource.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| uid | Integer | The ID of the reference resource to create or update. When you create a reference resource, you must specify a value of 0 for the <code>uid</code> path parameter. |

Request content

MIME type: application/json

Parameters:

| Name | Type | Description |
|-------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| uid | Integer | ID of the reference resource that is being created or updated. You must set the value of <code>uid</code> to 0 when you create a reference resource. |
| archived | Boolean | Reference is still retained in the database but is deprecated and should not be used in new references. |
| author | String | Reference creator. |
| description | String | User-supplied reference description. |
| name | String | User-supplied reference name. |
| priv | Boolean | Indicates whether the reference is publically visible. |
| url | String | URL of referenced website. |

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. See the previous property descriptions for a complete list of properties that are returned in the response.

Create a Reference

The following example PUT request creates a new reference. The reference is marked as private. The `uid` path parameter and the `uid` request property are both set to the value 0. The `uid` of the newly created resource is returned in the response. The value is used when the resource is updated by subsequent PUT requests.

`/ibm/ioc/api/sop-service/reference/0`

Sample PUT request content

```
{
  "uid": 0,
  "archived": false,
  "author": "wpsadmin",
```

```
"priv": true,
"name": "BBC",
"uri": "http://www.bbc.co.uk",
"description": "BBC Site"
}
```

Response Content

```
{
  "uid": 202,
  "archived": false,
  "author": "wpsadmin",
  "description": "BBC Site",
  "name": "BBC",
  "priv": true,
  "uri": "http://www.bbc.co.uk"
}
```

Update a Reference

The following example PUT request updates the reference that was created previously. The reference is updated to change it from private to public.. The `uid` path parameter and the `uid` request property values are both set to 202.

`/ibm/ioc/api/sop-service/reference/202`

Sample PUT request content

```
{
  "uid": "202",
  "archived": false,
  "priv": false,
  "name": "RTE News",
  "uri": "http://www.rte.ie/news",
  "description": "New Description"
}
```

Response Content

```
{
  "uid": "202",
  "archived": false,
  "priv": false,
  "name": "RTE News",
  "uri": "http://www.rte.ie/news",
  "description": "New Description"
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create or update the resource |
| 500 | Internal server error | An error occurred while processing the request |

17.3.6 DELETE method

Use the DELETE method to delete a reference.

Path parameters

| Name | Type | Description |
|------|---------|------------------------------------------------|
| uid | Integer | The ID of the reference resource to be deleted |

HTTP return codes

| Code | Description |
|------|----------------------------------------------------------------------------------------------------------------------|
| 204 | No content Returned when a resource is successfully deleted |
| 400 | Bad request The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized Not authorized to delete the resource |
| 500 | Internal server error An error occurred while processing the request |

17.4 SOP definition resource

Use the SOP definition resource to get, create, update, and delete SOP definitions and also other items, such as references and activities, that are associated with SOPs.

17.4.1 Data service class

`com.ibm.ioc.sop.SopDefinitionDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

17.4.2 Resource URI

`/ibm/ioc/api/sop-service/sopDefinition`

The SOP definition resource defines additional subresources. The URIs for these subresources are listed in subsequent sections.

17.4.3 Usage notes

In general, use the following calls to create and approve a new SOP definition. See the POST section for URIs, parameters, and additional information that is required to make the required service calls.

- Create a new SOP definition. This request creates a new, clean SOP definition in a draft state. The response contains the SOP definition ID that is used in subsequent modification requests.
- Add reference to SOP definition. Add any created references if necessary.

- Update the SOP definition draft. The main attributes that are updated in this request are the SOP name, description, and whether the activities must be completed in order.
- Update the SOP definition roles. This request allows updating of the various roles that are associated with this SOP.
- Add a manual activity definition or add a non-manual activity definition. Add as many activities as required. One call needs to be made for each activity that is being added to the SOP definition. See the POST section in 17.5 for details.
- Update the SOP definition draft to change the transitional state from true to false.
- Submit the SOP definition draft for approval.
- Approve or deny the submitted SOP definition draft.

After making the above calls, the SOP definition is approved and ready to be launched.

17.4.4 SOP definition properties

| Name | | Type | Description |
|--------------|-------|---------|-----------------------------------------------------------------------------------------------------------------------------------------|
| uid | | Integer | ID used in querying the SOP definition |
| cancelEvent | | Boolean | Deprecated |
| archived | | Boolean | SOP definition is still alive but new instances should not be created from this definition. |
| author | | String | SOP creator |
| description | | String | User-supplied SOP description |
| name | | String | User-supplied SOP name |
| ordered | | Boolean | Indicates whether or not the activities in this SOP need to be executed in order |
| statusString | | String | Indicates the status of the SOP definition object, where possible values are SOP_APPROVED, SOP_DRAFT, SOP_PENDING_APPROVAL, SOP_UNKNOWN |
| transitional | | Boolean | If the SOP definition is transitional, it is unsaved but can be recovered |
| version | | Integer | Creation timestamp of the SOP definition version in milliseconds |
| versionUid | | Integer | ID shared across all versions of an SOP definition |
| sop | | Object | Unused |
| versions | | Object | |
| | \$ref | String | Relative URL to all previous versions of the SOP; for example, "/sopDefinition/{SOP_ID}/versions" |
| lastEditBy | | String | Last user to edit the SOP |
| instance | | Object | |
| | \$ref | String | Relative URL to instances of the SOP |
| changeLog | | Object | |
| | \$ref | String | Relative URL to the change log of this SOP |

| Name | | Type | Description |
|---------------------|------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| triggerParameter | | Object | |
| | \$ref | String | Relative URL to trigger parameter of this SOP |
| reference | | Object | |
| | \$ref | String | Relative URL to this SOP's references, see the reference properties |
| roleAccess | | Object | |
| | \$ref | String | Relative URL to role access data for this SOP |
| activityDefinition | | Object | |
| | \$ref | String | Relative URL to activity definitions associated with this SOP |
| versionString | | String | Human-readable version timestamp string |
| activeInstanceCount | | Integer | Number of SOP instances that were spawned from this SOP definition and are currently active |
| accessType | | String | Valid values are ACCESS_NONE, ACCESS_READ_ONLY, ACCESS_READ_WRITE |
| actions | | Object Array | |
| | actionName | String | Valid format is "action." + user-supplied name of action, for example, "action.callPolice" |
| | actionUri | String | Relative URL to this action; for example, "sopDefinition/222/callPolice". Note that the forward slash does not appear at the beginning of the URL as it does in most other responses |

17.4.5 Supported HTTP methods

| Method | Authorized users | SOP owner | SOP reader | SOP admin | SOP author |
|--------|------------------|-----------|------------|-----------|------------|
| GET | No | Yes | Yes | Yes | Yes |
| PUT | No | Yes | No | Yes | Yes |
| POST | No | Yes | No | Yes | Yes |
| DELETE | No | Yes | No | Yes | Yes |

17.4.6 GET methods

The GET methods for the SOP definition resource and subresources are listed below.

Response content

MIME type: application/json. For a complete list of the properties that are returned in the response, see the SOP definition property descriptions.

17.4.7 Get SOP definitions

Use the GET method for the sopDefinition resource to get one or more SOP definitions. The method returns the most recently approved definitions of an SOP. Draft versions are not returned. Use the returned ID to query specific SOPs.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|--------------------|---------|---------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition to be returned |

Query parameters

| Name | Type | Description |
|--------------------|---------|------------------------------------------------------------------------|
| name | String | SOP definition name filter |
| includeDraft | Boolean | Include draft SOP definitions, the default value is <code>false</code> |
| includeAllVersions | Boolean | Include all SOP definition versions |

Sample response content

```
[{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 496,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": "Actions in case of fire",
  "name": "Fire",
  "ordered": true,
  "statusString": "SOP_APPROVED",
  "status": 3,
  "transitional": false,
  "version": 1380813187461,
  "versionUid": 363,
  "sop": {
    "$ref": "/sopDefinition/496/sop"
  },
  "versions": {
    "$ref": "/sopDefinition/496/versions"
  },
  "instance": {
    "$ref": "/sopDefinition/496/instance"
  },
},
```

```
"changeLog": {
  "$ref": "/sopDefinition/496/changeLog"
},
"triggerParameter": {
  "$ref": "/sopDefinition/496/triggerParameter"
},
"reference": {
  "$ref": "/sopDefinition/496/reference"
},
"roleAccess": {
  "$ref": "/sopDefinition/496/roleAccess"
},
"activityDefinition": {
  "$ref": "/sopDefinition/496/activityDefinition"
},
"versionString": "Oct 3, 2013 3:13:07 PM",
"activeInstanceCount": 0,
"accessType": "ACCESS_READ_WRITE",
"actions": [{
  "actionName": "action.addReference",
  "actionUri": "sopDefinition/496/reference"
},
{
  "actionName": "action.createDraft",
  "actionUri": "sopDefinition/496/createDraft"
}]
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.8 Get all versions of an SOP definition

Use the GET method for the versions subresource to get all versions of a SOP definition, in chronological order. If there is a draft version of this SOP, it will be the first item in the response and will have a statusString value of `SOP_DRAFT`. Approved versions will have a value of `SOP_APPROVED`. When you create a completely new SOP definition by using REST requests, use this request to retrieve the SOP draft ID after it has been created.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/versions

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|--------------------|---------|-----------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the versions are to be returned for |

Sample response content

```
[{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 531,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": "Protocol for flooding updated",
  "name": "Flood",
  "ordered": true,
  "statusString": "SOP_DRAFT",
  "status": 1,
  "transitional": false,
  "version": 1380879501192,
  "versionUid": 51,
  "sop": {
    "$ref": "/sopDefinition/531/sop"
  },
  "versions": {
    "$ref": "/sopDefinition/531/versions"
  },
  "lastEditBy": "wpsadmin",
  "instance": {
    "$ref": "/sopDefinition/531/instance"
  },
  "changeLog": {
    "$ref": "/sopDefinition/531/changeLog"
  },
  "triggerParameter": {
    "$ref": "/sopDefinition/531/triggerParameter"
  },
  "reference": {
    "$ref": "/sopDefinition/531/reference"
  },
  "roleAccess": {
    "$ref": "/sopDefinition/531/roleAccess"
  },
  "activityDefinition": {
    "$ref": "/sopDefinition/531/activityDefinition"
  },
  "versionString": "Oct 4, 2013 9:38:21 AM",
  "activeInstanceCount": 0,
  "accessType": "ACCESS_READ_WRITE",
  "actions": [{
    "actionName": "action.addReference",
    "actionUri": "sopDefinition/531/reference"
  },
  {
    "actionName": "action.submitForApproval",
    "actionUri": "sopDefinition/531/submitForApproval"
  }
}]
```

```
    },
    {
      "actionName": "action.discardDraft",
      "actionUri": "sopDefinition/531/discardDraft"
    }
  ],
},
{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 222,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": "Protocol for flood",
  "name": "Flood",
  "ordered": true,
  "statusString": "SOP_APPROVED",
  "status": 3,
  "transitional": false,
  "version": 1380792047239,
  "versionUid": 51,
  "sop": {
    "$ref": "/sopDefinition/222/sop"
  },
  "versions": {
    "$ref": "/sopDefinition/222/versions"
  },
  "lastEditBy": "wpsadmin",
  "instance": {
    "$ref": "/sopDefinition/222/instance"
  },
  "changeLog": {
    "$ref": "/sopDefinition/222/changeLog"
  },
  "triggerParameter": {
    "$ref": "/sopDefinition/222/triggerParameter"
  },
  "reference": {
    "$ref": "/sopDefinition/222/reference"
  },
  "roleAccess": {
    "$ref": "/sopDefinition/222/roleAccess"
  },
  "activityDefinition": {
    "$ref": "/sopDefinition/222/activityDefinition"
  },
  "versionString": "Oct 3, 2013 9:20:47 AM",
  "activeInstanceCount": 0,
  "accessType": "ACCESS_READ_WRITE",
  "actions": [{
    "actionName": "action.addReference",
    "actionUri": "sopDefinition/222/reference"
  },
  {
    "actionName": "action.createDraft",
    "actionUri": "sopDefinition/222/createDraft"
  }
]
```

```
} ]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.9 Get change log for an SOP definition

Use the GET method for the changeLog subresource to get the change log for an SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/changeLog

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|--------------------|---------|------------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the change log is to be returned for |

Sample response content

```
[
  {
    "uid": 797,
    "attribute": "status",
    "changeTs": 1381317330392,
    "from": "",
    "to": "CREATED",
    "user": "wpsadmin",
    "actualStartTsString": "Oct 9, 2013 11:15:30 AM"
  },
  {
    "uid": 800,
    "attribute": "role_access_add",
    "changeTs": 1381317358689,
    "from": "",
    "to": "TestGroup1:ACCESS_READ_WRITE",
    "user": "wpsadmin",
    "actualStartTsString": "Oct 9, 2013 11:15:58 AM"
  },
  {
    "uid": 801,
```

```
    "attribute": "role_access_add",
    "changeTs": 1381317358689,
    "from": "",
    "to": "TestGroup4:ACCESS_READ_ONLY",
    "user": "wpsadmin",
    "actualStartTsString": "Oct 9, 2013 11:15:58 AM"
  },
  {
    "uid": 802,
    "attribute": "role_access_remove",
    "changeTs": 1381317381173,
    "from": "TestGroup4:ACCESS_READ_ONLY",
    "to": "",
    "user": "wpsadmin",
    "actualStartTsString": "Oct 9, 2013 11:16:21 AM"
  }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.10 Get latest approved version of an SOP definition

Use the GET method for the latestApprovedVersion subresource to get the latest approved version of an SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_VERSION_UID}/latestApprovedVersion

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|-----------------|---------|-----------------------------------------------------------------------------------|
| SOP_VERSION_UID | Integer | The ID of the SOP version that the latest approved version is being requested for |

Sample response content

```
{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 496,
  "cancelEvent": false,
```

```
    "archived": false,
    "author": "wpsadmin",
    "description": "Actions in case of fire",
    "name": "Fire",
    "ordered": true,
    "statusString": "SOP_APPROVED",
    "status": 3,
    "transitional": false,
    "version": 1380813187461,
    "versionUid": 363,
    "sop": {
      "$ref": "/sopDefinition/496/sop"
    },
    "versions": {
      "$ref": "/sopDefinition/496/versions"
    },
    "lastEditBy": "wpsadmin",
    "instance": {
      "$ref": "/sopDefinition/496/instance"
    },
    "changeLog": {
      "$ref": "/sopDefinition/496/changeLog"
    },
    "triggerParameter": {
      "$ref": "/sopDefinition/496/triggerParameter"
    },
    "reference": {
      "$ref": "/sopDefinition/496/reference"
    },
    "roleAccess": {
      "$ref": "/sopDefinition/496/roleAccess"
    },
    "activityDefinition": {
      "$ref": "/sopDefinition/496/activityDefinition"
    },
    "versionString": "Oct 3, 2013 3:13:07 PM",
    "activeInstanceCount": 0,
    "accessType": "ACCESS_READ_WRITE",
    "actions": [{
      "actionName": "action.addReference",
      "actionUri": "sopDefinition/496/reference"
    },
    {
      "actionName": "action.createDraft",
      "actionUri": "sopDefinition/496/createDraft"
    }
  ]
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 420 | Method failure | Returned when there are no approved versions of an SOP |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.11 Get roles for an SOP definition

Use the GET method for the roleAccess subresource to get a list of roles that are assigned to an SOP.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/roleAccess

Path parameters

| Name | Type | Description |
|--------------------|---------|----------------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the role accesses are to be returned for |

Sample response content

```
[{
  "uid": 29,
  "roleName": "CityWideAdmin",
  "accessTypeString": "ACCESS_READ_WRITE",
  "accessType": 2
},
{
  "uid": 30,
  "roleName": "CityWideOperator",
  "accessTypeString": "ACCESS_READ_ONLY",
  "accessType": 1
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.12 Get references for an SOP definition

Use the GET method for the reference subresource to get a list of the references for an SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/reference

Path parameters

| Name | Type | Description |
|--------------------|---------|-------------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the references are to be returned for |

Sample response content

```
[
  {
    "uid": 367,
    "archived": false,
    "description": "NOTIFICATION",
    "name": "Fire Website",
    "priv": false,
    "uri": "http://www.firesafety.org"
  },
  {
    "uid": 202,
    "archived": false,
    "author": "wpsadmin",
    "description": "News Source",
    "name": "RTE News",
    "priv": false,
    "uri": "http://www.rte.ie/news"
  }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.13 POST methods

The POST methods for the SOP definition resource and subresources are described in the following sections.

Request content

MIME type: application/json.

Response content

MIME type: application/json. For a complete list of the properties that are returned in the response, see the SOP definition property descriptions.

17.4.14 Create an SOP definition

Use the POST method for the `sopDefinition` resource to create a new SOP definition. To create a new SOP definition, run the POST request with the following sample request content. The request creates a new, clean SOP definition. To update the SOP definition, in subsequent POST requests you can pass the returned response content without the relative URL properties.

Resource URI

`/ibm/ioc/api/sop-service/sopDefinition/`

Sample POST request content

```
{
  "uid": 0,
  "name": "Sample SOP",
  "description": " Sample SOP description"
}
```

Sample response content

```
{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 957,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": " Sample SOP description"
  "name": "Sample SOP",
  "ordered": false,
  "statusString": "SOP_DRAFT",
  "status": 1,
  "transitional": true,
  "version": 1381328370167,
  "versionUid": 956,
  "sop": {
    "$ref": "/sopDefinition/957/sop"
  },
  "versions": {
    "$ref": "/sopDefinition/957/versions"
  },
  "instance": {
    "$ref": "/sopDefinition/957/instance"
  },
  "changeLog": {
    "$ref": "/sopDefinition/957/changeLog"
  },
  "triggerParameter": {
    "$ref": "/sopDefinition/957/triggerParameter"
  },
  "reference": {
    "$ref": "/sopDefinition/957/reference"
  },
  "roleAccess": {
```

```
    "$ref": "/sopDefinition/957/roleAccess"
  },
  "activityDefinition": {
    "$ref": "/sopDefinition/957/activityDefinition"
  },
  "versionString": "Oct 9, 2013 2:19:30 PM",
  "activeInstanceCount": 0,
  "accessType": "ACCESS_NONE",
  "actions": []
}
```

As previously mentioned, you can pass the response content without the relative URL properties in subsequent POST requests to update the SOP definition. To update the description by using the response content shown in the previous example, use the URI and request content that is shown in the following example.

`/ibm/ioc/api/sop-service/sopDefinition`

```
{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 957,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": "New description",
  "name": "Sample SOP",
  "ordered": false,
  "statusString": "SOP_DRAFT",
  "status": 1,
  "transitional": true,
  "version": 1381328370167,
  "versionUid": 956,
  "versionString": "Oct 9, 2013 2:19:30 PM",
  "activeInstanceCount": 0,
  "accessType": "ACCESS_NONE",
  "actions": []
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.15 Add a reference to an SOP definition

Use the POST method for the reference subresource to add a reference to an SOP definition. To add a reference to an SOP definition, you must pass the ID of the reference in the request content.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/reference

Path parameters

| Name | Type | Description |
|--------------------|---------|---------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | ID of the SOP definition that the reference is added to |

Sample request content

```
{
  "name": "IBM",
  "description": "IBM Website",
  "uri": "http://www.ibm.com",
  "uid": 10
}
```

Sample response content

If the POST request is successful, the reference is returned in the response. See the reference resource section for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.16 Create an SOP definition draft

Use the POST method for the createDraft subresource to create a draft of an SOP. The response content contains the SOP definition from the approved SOP definition on which your draft is based. If you are creating a draft by using the REST service with the intention of updating or approving the draft, you must use the ID of the draft that you created with the createDraft POST request. Because the ID is not returned in the createDraft response, you must obtain the ID by submitting a GET request to retrieve all versions of the SOP definition, as described in the GET section. The first SOP definition item in the array that is returned in the GET request response contains a `statusString` value of `SOP_DRAFT`. Use the value of the `uid` that is contained in `SOP_DRAFT` as the ID for updating, submitting, and approving the draft SOP.

If you submit the createDraft POST request by using the value of the `uid` for an SOP that is already in draft mode, the result will be a "400 Bad request" response code. Before you attempt to submit a createDraft POST request, check if an SOP already has a draft version by submitting a GET request to retrieve all versions of the SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_ID}/createDraft

Path parameters

| Name | Type | Description |
|--------------------|---------|------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the draft is to be created for |

Sample Response Content

```
{
  "matchAll": false,
  "trigAutomatic": false,
  "uid": 547,
  "cancelEvent": false,
  "archived": false,
  "author": "wpsadmin",
  "description": "Actions in case of fire",
  "name": "Fire",
  "ordered": true,
  "statusString": "SOP_APPROVED",
  "status": 3,
  "transitional": false,
  "version": 1381240802574,
  "versionUid": 363,
  "sop": {
    "$ref": "/sopDefinition/547/sop"
  },
  "versions": {
    "$ref": "/sopDefinition/547/versions"
  },
  "lastEditBy": "wpsadmin",
  "instance": {
    "$ref": "/sopDefinition/547/instance"
  },
  "changeLog": {
    "$ref": "/sopDefinition/547/changeLog"
  },
  "triggerParameter": {
    "$ref": "/sopDefinition/547/triggerParameter"
  },
  "reference": {
    "$ref": "/sopDefinition/547/reference"
  },
  "roleAccess": {
    "$ref": "/sopDefinition/547/roleAccess"
  },
  "activityDefinition": {
    "$ref": "/sopDefinition/547/activityDefinition"
  },
  "versionString": "Oct 8, 2013 2:00:02 PM",
  "activeInstanceCount": 0,
  "accessType": "ACCESS_READ_WRITE",
  "actions": [{
```

```
        "actionName": "action.addReference",
        "actionUri": "sopDefinition/547/reference"
    },
    {
        "actionName": "action.createDraft",
        "actionUri": "sopDefinition/547/createDraft"
    }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.17 Update an SOP definition draft

Use the POST method for the `sopDefinition` resource to update an SOP draft. Only the value of the `uid` is required in the request content, which is the ID of the draft that is being updated. It is necessary to supply only the properties that are being updated. Therefore, in a request to update a description, it is necessary to supply only values for the `uid` and `description` properties.

Use the POST method for the `sopDefinition` resource only to modify the name, description, and any of the other properties that are shown in the following sample request. Updating activities is documented in the respective sections. If you attempt to make an update request by using the UID of an SOP that is not a draft version, the request will fail and return an error code of 400.

Resource URI

`/ibm/ioc/api/sop-service/sopDefinition`

Sample POST request content

```
{
  "uid": 563,
  "name": "Emergency Services Required",
  "description": "Procedure to follow when 911 call is received",
  "trigAutomatic": false,
  "ordered": true,
  "matchAll": false,
  "cancelEvent": false
}
```

Sample response content

If the POST request is successful, the SOP draft is returned in the response. See the SOP definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.18 Update SOP definition roles

Use the POST method for the `sopDefinition` resource to update the SOP roles. You must supply the SOP draft ID in the request content. You can alter owners and readers of activities by adding or removing them from the `roleAccess` argument array. Supply items as shown in the following sample request. For `accessType`, assign a value of 1 for readers and 2 for owners. Assign appropriate values for `roleName`. The value of `roleName` is not validated, so if you supply the name of a role that does not exist, you will still receive a "200 OK" response and the non-existent role will be displayed in the list of owners and readers in the user interface.

Resource URI

`/ibm/ioc/api/sop-service/sopDefinition`

Path parameters

| Name | Type | Description |
|---------------|---------|------------------------------|
| SOP_DRAFT_UID | Integer | The ID of the SOP definition |

Sample POST request content

```
{
  "uid": 785,
  "roleAccess": [
    {
      "roleName": "TestGroup3",
      "accessType": 2
    },
    {
      "roleName": "TestGroup4",
      "accessType": 1
    }
  ],
}
```

```
{
  "roleName": "wpsadmins",
  "accessType": 2
}
```

Sample Response Content

If the POST request is successful, the SOP definition is returned in the response. See the SOP definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.19 Submit SOP definition draft for approval or discard draft

Use the POST method for the approval subresource to submit an SOP for approval. Use the POST method for the discardDraft subresource to discard an SOP.

Resource URIs

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DRAFT_UID}/submitForApproval

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DRAFT_UID}/discardDraft

Path parameters

| Name | Type | Description |
|---------------|--------|------------------------------------|
| SOP_DRAFT_UID | String | The ID of the SOP definition draft |

Sample response content

If the POST request is successful, the SOP draft is returned in the response, with the value of the `statusString` set to `SOP_PENDING_APPROVAL`. If you attempt to submit a request by using the ID of an SOP that is not a draft version, the request will still succeed and change that SOP's status to "SOP_PENDING_APPROVAL". If you attempt to submit a draft discard request for an SOP that is not in a draft state, the status of the SOP will not be updated and the request will return a 400 error code.

See the SOP definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.20 Approve or deny a submitted SOP definition draft

Use the POST method for the approve and disapprove subresources to approve or deny a draft SOP.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DRAFT_UID}/approve

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DRAFT_UID}/disapprove

Path parameters

| Name | Type | Description |
|---------------|--------|------------------------------------|
| SOP_DRAFT_UID | String | The ID of the SOP definition draft |

Sample response content

If the POST request is successful, the SOP definition is returned in the response. See the activity instance property description for a complete list of properties that are returned in the response.

Take care when you use the approve and disapprove resources. If you submit a disapprove request for an SOP that has not been submitted for approval, the SOP is still converted back into draft mode. Therefore, it is possible to disapprove an approved SOP definition. It is also possible to approve a draft version of an SOP that has not even been submitted for approval.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.21 Copy an SOP definition

Use the POST method for the duplicate subresource to copy an SOP definition. If the POST request is successful, The SOP definition that was the target of the copy is returned in the response. To get the new copy, issue a GET request for the sopDefinition resource. The name of the copied SOP definition is prefixed with "Copy Of".

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/duplicate

Path parameters

| Name | Type | Description |
|--------------------|---------|-------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition to be copied |

Sample response content

If the POST request is successful, the SOP definition that was the target of the copy, not the new copy of the SOP definition, is returned in the response. See the SOP definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.22 PUT methods

The PUT methods for the SOP definition resource and subresources are listed in below.

Request content

MIME type: application/json.

Response content

MIME type: application/json. For a complete list of the properties that are returned in the response, see the SOP definition property descriptions.

17.4.23 Update an SOP definition draft

Use the PUT method for the `sopDefinition` resource to update an SOP draft. Only the value of the `uid` is required in the request content, which is the ID of the draft that is being updated. It is necessary to supply only the properties that are being updated. Therefore, in a request to update a description, it is necessary to supply only values for the `uid` and `description` properties.

Use the PUT method for the `sopDefinition` resource only to modify the name, description, and any of the other properties that are shown in the following sample request content. Updating activities is documented in the respective sections. If you attempt to make an update request by using the UID of an SOP that is not a draft version, the request will fail and return an error code of 400.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DRAFT_UID}

Path parameters

| Name | Type | Description |
|---------------|--------|------------------------------------|
| SOP_DRAFT_UID | String | The ID of the SOP definition draft |

Sample POST request content

```
{
  "uid": 563,
  "name": "Emergency Services Required",
  "description": "Procedure to follow when 911 call is received",
  "trigAutomatic": false,
  "ordered": true,
  "matchAll": false,
  "cancelEvent": false
}
```

Sample response content

If the POST request is successful, the SOP draft is returned in the response. See the SOP definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.24 Add a reference to an SOP definition

You can also use the PUT method for the reference subresource to add a reference to an SOP definition. To add a reference to an SOP definition, the ID of the reference to be added to the SOP definition must be passed as a path parameter. In addition, you must also pass the reference definition in the request content.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/reference/{REFERENCE_UID}

Path parameters

| Name | Type | Description |
|--------------------|---------|----------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | ID of the SOP definition that the reference is added to |
| REFERENCE_UID | Integer | ID of the reference resource to be added to the SOP definition |

Sample request content

```
{
  "name": "IBM",
  "description": "IBM Website",
  "uri": "http://www.ibm.com",
  "uid": 10
}
```

Sample request content

If the POST request is successful, the reference is returned in the response. See the reference resource section for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.25 DELETE methods

The DELETE methods for the SOP definition resource and subresources are described in the following sections.

17.4.26 Remove a reference from an SOP Definition

Use the DELETE method with the reference subresource to remove a reference from an SOP definition.

Resource URI

```
/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/reference/{REFERENCE_UID}
```

Path parameters

| Name | Type | Description |
|--------------------|---------|-----------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the reference is to be removed from |
| REFERENCE_UID | Integer | ID of the reference resource to be removed from the SOP definition |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.4.27 Delete an SOP definition

Use the DELETE method to delete an SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}

Path parameters

| Name | Type | Description |
|--------------------|---------|----------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition to delete |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5 SOP definition - activity definition subresource

Use the activity definition subresource to get, add, and remove activity definitions for an SOP definition. Add at least one activity to an SOP definition before it is approved.

17.5.1 Data Service class

com.ibm.ioc.sop.SopDefinitionDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

17.5.2 Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}/activityDefinition

17.5.3 Activity definition properties

| Name | | Type | Description |
|----------------------------|---------------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| uid | | Integer | ID to use for querying this activity |
| required | | Boolean | Indicates whether this activity must be completed |
| actOrder | | Integer | Order in which this activity should be completed, relative to the other activities. |
| archived | | Boolean | Indicates whether the activity is archived |
| description | | String | User-supplied description of this activity |
| estDuration | | Integer | Number of the duration units required to complete this activity |
| durationUnit | | Integer | 0 for none, 1 for minutes, 2 for hours, 3 for days |
| durationUnitString | | String | String representation of the duration unit, for example, durationMinutes |
| name | | String | Activity name |
| transitional | | Boolean | If the activity definition is transitional, it is unsaved but can be recovered. |
| version | | Integer | Creation timestamp of the SOP definition version in milliseconds |
| versionUid | | Integer | ID shared across all versions of an activity definition |
| activities | | Object | Unused |
| changeLog | | Object | |
| | \$ref | String | Relative URL of this activity instance's change log |
| activityDefinitionProperty | | Object Array | Activity properties, where the number of required properties is different for the various types of activities: Manual – None If_Else – Two, the versionUids of the "then" SOP and the "else" SOP that can be launched by this activity SOP – One, the SOP's versionUid REST – Three, the REST service address, the username, and the password Automation – One, the name of the automation activity. Notification – One, the notification's uid. |
| | uid | Integer | The value 0 can be supplied when creating the activity definition |
| | propertyValue | String | A value from the previous activityDefinitionProperty list. |

| Name | | Type | Description |
|---------------|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | activityTypeProperty | Object | An object with the following uid and name values, where the values indicate what the propertyValue in the parent object represents: REST URL – {"uid": 0, "name", "restURL"} REST username – {"uid": 1, "name", "restUid"} REST password – {"uid": 2, "name", "restPwd"} SOP activity – {"uid": 3, "name", "sopDefVersionUid"} If/else 'then' activity – {"uid": 4, "name", "thenSopDefVersionUid"} If/else 'else' activity – {"uid": 5, "name", "elseSopDefVersionUid"} Notification – {"uid": 6, "name", "uid"} Automation – {"uid": 13, "name", "name"} See the "Add Non-Manual Activity Definition" section for more information. |
| reference | | Object | |
| | \$ref | String | Relative URL to this activity's references, see reference properties |
| sopDefinition | | Object | See the SOP definition table |
| roleAccess | | Object | |
| | \$ref | String | Relative URL to this activity's role access information |
| accessType | | String | Valid values are ACCESS_NONE, ACCESS_READ_ONLY, and ACCESS_READ_WRITE |
| activityType | | Object | Only required for non-manual activities, see the "Add Non-Manual Activity Definition" section for more information. |

17.5.4 Supported HTTP methods

| Method | Authorized users | SOP owner | SOP reader | SOP admin | SOP author |
|--------|------------------|-----------|------------|-----------|------------|
| GET | No | Yes | Yes | Yes | Yes |
| PUT | No | Yes | No | Yes | Yes |
| POST | No | Yes | No | Yes | Yes |
| DELETE | No | Yes | No | Yes | Yes |

17.5.5 GET method

Use the GET method for the activity definition resource to get one or more activity definitions for an SOP definition.

Path parameters

| Name | Type | Description |
|-------------------------|---------|------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition to get the activity definitions for |
| ACTIVITY_DEFINITION_UID | Integer | The ID of the activity definition to retrieve |

Response content

MIME type: application/json. For a complete list of the properties that are returned in the response, see the SOP definition property descriptions.

Sample Response Content

```
[{
  "uid": 1035,
  "required": false,
  "actOrder": 1,
  "archived": false,
  "description": "Direct evacuation through emergency exits",
  "durationUnitString": "durationNone",
  "durationUnit": 0,
  "estDuration": 0,
  "name": "Evacuate Building",
  "transitional": true,
  "version": 1381396854940,
  "versionUid": 0,
  "activities": {
    "$ref": "/activityDefinition/1035/activity"
  },
  "changeLog": {
    "$ref": "/activityDefinition/1035/changeLog"
  },
  "activityDefinitionProperty": [],
  "reference": [{
    "uid": 43,
    "archived": false,
    "author": "wpsadmin",
    "description": "New Description",
    "name": "RTE News",
    "priv": false,
    "uri": "http://www.rte.ie/news"
  }],
  "sopDefinition": {
    "matchAll": false,
    "trigAutomatic": false,
    "uid": 1020,
    "cancelEvent": false,
    "archived": false,
    "author": "wpsadmin",
    "description": "Each Kind Of Activity",
    "name": "Activity Selection",
    "ordered": true,
    "statusString": "SOP_DRAFT",
    "status": 1,
    "transitional": false,
    "version": 1381396854924,
    "versionUid": 856,
    "sop": {
      "$ref": "/sopDefinition/1020/sop"
    },
    "versions": {
      "$ref": "/sopDefinition/1020/versions"
    },
    "lastEditBy": "wpsadmin",
    "instance": {
      "$ref": "/sopDefinition/1020/instance"
    },
    "changeLog": {
```

```
        "$ref": "/sopDefinition/1020/changeLog"
      },
      "triggerParameter": {
        "$ref": "/sopDefinition/1020/triggerParameter"
      },
      "reference": {
        "$ref": "/sopDefinition/1020/reference"
      },
      "roleAccess": {
        "$ref": "/sopDefinition/1020/roleAccess"
      },
      "activityDefinition": {
        "$ref": "/sopDefinition/1020/activityDefinition"
      },
      "activeInstanceCount": 0,
      "accessType": "ACCESS_READ_WRITE",
      "actions": [{
        "actionName": "action.addReference",
        "actionUri": "sopDefinition/1020/reference"
      },
      {
        "actionName": "action.submitForApproval",
        "actionUri": "sopDefinition/1020/submitForApproval"
      },
      {
        "actionName": "action.discardDraft",
        "actionUri": "sopDefinition/1020/discardDraft"
      }
    ],
    "roleAccess": [{
      "uid": 1036,
      "roleName": "wpsadmins",
      "accessTypeString": "ACCESS_READ_WRITE",
      "accessType": 2
    }],
    "accessType": "ACCESS_READ_WRITE"
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5.6 POST method

Use the POST method to add or update an activity definition for an SOP definition.

Path parameters

| Name | Type | Description |
|--------------------|---------|-------------------------------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the activity definition is to be created or updated for |

Request content

MIME type: application/json.

Response content

MIME type: application/json. See the activity definition property description for a complete list of properties that are returned in the response.

17.5.7 Add a manual activity definition

Use the POST method to add a manual activity definition to an SOP definition.

The sample POST content shown below adds a manual activity definition to an SOP definition. If you attempt to add an activity definition to an SOP that is not in draft mode, the request results in a 400 error code response from the server.

Sample POST request content

```
{
  "name": "Adding a new activity definition",
  "required": false,
  "durationUnit": "3",
  "description": "A new activity",
  "reference": [
    {
      "name": "RTE News",
      "description": "A news source",
      "uri": "http://www.rte.ie/news",
      "uid": 202
    }
  ],
  "estDuration": 5,
  "actOrder": 4,
  "roleAccess": [
    {
      "roleName": "TestGroup2",
      "accessType": 2
    },
    {
      "roleName": "TestGroup5",
      "accessType": 1
    }
  ],
  "activityType": null
}
```

Sample response content

```
{
  "uid": 0,
  "required": false,
  "actOrder": 4,
  "archived": false,
  "description": "A new activity",
  "durationUnitString": "durationMinutes",
  "durationUnit": 3,
  "estDuration": 5,
  "name": "Adding a new activity definition",
  "transitional": false,
  "versionUid": 0,
  "activities": {
    "$ref": "/activityDefinition/0/activity"
  },
  "changeLog": {
    "$ref": "/activityDefinition/0/changeLog"
  },
  "reference": [
    {
      "uid": 202,
      "archived": false,
      "description": "update news again again again",
      "name": "RTE News",
      "priv": false,
      "uri": "http://www.rte.ie/news"
    }
  ],
  "roleAccess": [
    {
      "uid": 0,
      "roleName": "TestGroup2",
      "accessTypeString": "ACCESS_READ_WRITE",
      "accessType": 2
    },
    {
      "uid": 0,
      "roleName": "TestGroup5",
      "accessTypeString": "ACCESS_READ_ONLY",
      "accessType": 1
    }
  ],
  "accessType": "ACCESS_NONE"
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5.8 Add non-manual activity definition

Use the POST method to add a non-manual activity definition to an SOP definition.

The following sample POST content adds a non-manual activity definition to an SOP definition. If you attempt to add an activity definition to an SOP that is not in draft mode, the request results in a 400 error code response from the server.

Sample POST request content

```
{
  {
    "name": "An ifelse Activity Definition",
    "required": false,
    "durationUnit": "3",
    "description": "launch test def else something on fire",
    "reference": [],
    "estDuration": 3,
    "actOrder": 2,
    "roleAccess": [
      {
        "roleName": "wpsadmins",
        "accessType": 2
      }
    ],
    "activityDefinitionProperty": [
      {
        "propertyValue": "583",
        "activityTypeProperty": {
          "uid": 4,
          "name": "thenSopDefVersionUid"
        }
      },
      {
        "propertyValue": "363",
        "activityTypeProperty": {
          "uid": 5,
          "name": "elseSopDefVersionUid"
        }
      }
    ],
    "activityType": {
      "uid": 0,
      "description": "",
      "name": "ifThenElseActivity",

```

```
    "widget": "IfThenElseActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  }
}
```

Sample Response Content

```
{
  "uid": 0,
  "required": false,
  "actOrder": 2,
  "archived": false,
  "description": "launch test def else something on fire",
  "durationUnitString": "durationMinutes",
  "durationUnit": 3,
  "estDuration": 3,
  "name": "An ifelse Activity Definition",
  "transitional": false,
  "versionUid": 0,
  "activities": {
    "$ref": "/activityDefinition/0/activity"
  },
  "activityType": {
    "uid": 0,
    "description": "",
    "name": "ifThenElseActivity",
    "widget": "IfThenElseActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  },
  "changeLog": {
    "$ref": "/activityDefinition/0/changeLog"
  },
  "activityDefinitionProperty": [
    {
      "uid": 0,
      "propertyValue": "583",
      "activityDefinition": null,

```

```
        "activityTypeProperty": {
          "uid": 4,
          "name": "thenSopDefVersionUid"
        }
      },
      {
        "uid": 0,
        "propertyValue": "363",
        "activityDefinition": null,
        "activityTypeProperty": {
          "uid": 5,
          "name": "elseSopDefVersionUid"
        }
      }
    ],
    "reference": [],
    "roleAccess": [
      {
        "uid": 0,
        "roleName": "wpsadmins",
        "accessTypeString": "ACCESS_READ_WRITE",
        "accessType": 2
      }
    ],
    "accessType": "ACCESS_NONE"
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5.9 Differences between adding manual and non-manual activity definitions

The difference between adding a manual activity and a non-manual activity definition to a SOP definition is the presence of the `activityType` and `activityDefinitionProperty` attributes. For each activity type, modify the `activityDefinitionProperty` content that is shown in the sample request content by using the instructions that are under the "activityDefinitionProperty" entry in the Activity Instance Properties table. When you add activities of the types that are indicated in the following example, supply the `activityType` values exactly as shown in the example:

If Then Else:

```
"activityType": {
  "uid": 0,
  "description": "",
  "name": "ifThenElseActivity",
  "widget": "IfThenElseActivityTypePanel",
```

```
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  }
}
```

Rest activity:

```
"activityType": {
  "uid": 4,
  "description": "",
  "name": "restActivity",
  "widget": "RestActivityTypePanel",
  "icon": "",
  "activityTypeProperty": [
    {
      "uid": 0,
      "name": "restURL"
    },
    {
      "uid": 1,
      "name": "restUid"
    },
    {
      "uid": 2,
      "name": "restPwd"
    }
  ]
}
```

Notification activity:

```
"activityType": {
  "uid": 1,
  "description": "",
  "name": "notificationActivity",
  "widget": "NotificationActivityTypePanel",
  "icon": "",
  "activityTypeProperty": [
    {
      "uid": 6,
      "name": "uid"
    }
  ]
}
```

SOP activity:

```
"activityType": {
  "uid": 3,
  "description": "",
  "name": "sopActivity",
  "widget": "SopActivityTypePanel",
  "icon": "",
  "activityTypeProperty": [
    {
      "uid": 3,
      "name": "sopDefVersionUid"
    }
  ]
}
```

Automation activity:

```
"activityType": {
  "uid": 5,
  "description": "",
  "name": "automationActivity",
  "widget": "TSRMAutomationPanel",
  "icon": "",
  "activityTypeProperty": [
    {
      "uid": 13,
      "name": "name"
    }
  ]
}
```

17.5.10 Update an activity definition

Use the POST request to update an activity definition. You must supply the ID of the activity definition that you are updating in the request content. It is necessary to supply only the properties that are being updated. Therefore, in a request to update a description, it is necessary to supply only values for the `uid` and `description` properties. If you attempt to make an update request by using the ID of an SOP that is not a draft version, the request fails and return an error code of 400.

Sample POST request content

```
{
  "name": "Sops update rest ok",
  "required": true,
  "durationUnit": "1",
  "description": "Read some documentation and have a look at the
code.",
  "reference": [],
  "estDuration": 1,
  "uid": 532,
  "actOrder": 1,
  "roleAccess": [
    {
      "roleName": "wpsadmins",
      "accessType": 2
    }
  ]
}
```

```
    },
    {
      "roleName": "TestGroup1",
      "accessType": 1
    }
  ],
  "activityType": null
}
```

Sample response content

```
{
  "uid": 532,
  "required": true,
  "actOrder": 1,
  "archived": false,
  "description": "Read some documentation and have a look at the
code.",
  "durationUnitString": "durationDays",
  "durationUnit": 1,
  "estDuration": 1,
  "name": "Sops update rest ok",
  "transitional": true,
  "version": 1380879501197,
  "versionUid": 0,
  "activities": {
    "$ref": "/activityDefinition/532/activity"
  },
  "changeLog": {
    "$ref": "/activityDefinition/532/changeLog"
  },
  "activityDefinitionProperty": [],
  "reference": [],
  "sopDefinition": {
    "matchAll": false,
    "trigAutomatic": false,
    "uid": 531,
    "cancelEvent": false,
    "archived": false,
    "author": "wpsadmin",
    "description": "Testing create",
    "name": "SOP Name Rest Update 4",
    "ordered": true,
    "statusString": "SOP_DRAFT",
    "status": 1,
    "transitional": false,
    "version": 1380879501192,
    "versionUid": 51,
    "sop": {
      "$ref": "/sopDefinition/531/sop"
    },
    "versions": {
      "$ref": "/sopDefinition/531/versions"
    },
    "lastEditBy": "wpsadmin",
    "instance": {
      "$ref": "/sopDefinition/531/instance"
    }
  }
}
```

```
    },
    "changeLog": {
      "$ref": "/sopDefinition/531/changeLog"
    },
    "triggerParameter": {
      "$ref": "/sopDefinition/531/triggerParameter"
    },
    "reference": {
      "$ref": "/sopDefinition/531/reference"
    },
    "roleAccess": {
      "$ref": "/sopDefinition/531/roleAccess"
    },
    "activityDefinition": {
      "$ref": "/sopDefinition/531/activityDefinition"
    },
    "activeInstanceCount": 0,
    "accessType": "ACCESS_READ_WRITE",
    "actions": [
      {
        "actionName": "action.addReference",
        "actionUri": "sopDefinition/531/reference"
      },
      {
        "actionName": "action.submitForApproval",
        "actionUri": "sopDefinition/531/submitForApproval"
      },
      {
        "actionName": "action.discardDraft",
        "actionUri": "sopDefinition/531/discardDraft"
      }
    ]
  },
  "roleAccess": [
    {
      "uid": 533,
      "roleName": "wpsadmins",
      "accessTypeString": "ACCESS_READ_WRITE",
      "accessType": 2
    },
    {
      "uid": 534,
      "roleName": "TestGroup1",
      "accessTypeString": "ACCESS_READ_ONLY",
      "accessType": 1
    }
  ],
  "accessType": "ACCESS_NONE"
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5.11 PUT method

You can also use the PUT request to update an activity definition. You must supply the ID of the activity definition you are updating in the request content. It is necessary to supply only the properties that are being updated. Therefore, in a request to update a description, it is necessary to supply only values for the `uid` and `description` properties. If you attempt to make an update request by using the ID of an SOP that is not a draft version, the request fails and return an error code of 400.

Path parameters

| Name | Type | Description |
|-------------------------|--------|-------------------------------------------------|
| ACTIVITY_DEFINITION_UID | String | The ID of the activity definition to be updated |

Request content

MIME type: application/json.

Sample PUT request content

```
{
  "name": "Sops update rest ok",
  "required": true,
  "durationUnit": "1",
  "description": "Updated description"
}
```

Response content

MIME type: application/json.

If the PUT request is successful, the activity definition is returned in the response. See the activity definition property description for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.5.12 DELETE method

Use the DELETE method to remove an activity definition from an SOP definition. The activity definition is removed from the SOP definition and deleted.

Path parameters

| Name | Type | Description |
|-------------------------|---------|----------------------------------------------------------------------|
| SOP_DEFINITION_UID | Integer | The ID of the SOP definition that the activity is being removed from |
| ACTIVITY_DEFINITION_UID | Integer | The ID of the activity definition to delete |

HTTP return codes

| Code | Description | |
|------|-----------------------|--------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 500 | Internal server error | An error occurred while processing the request |

17.6 Standard Operating Procedure instance resource

Use the SOP instance resource to launch an SOP, to get the activity instances for an SOP, and to control the life cycle of an SOP.

17.6.1 Data service class

`com.ibm.ioc.sop.SopDataService`

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

17.6.2 Resource URI

`/ibm/ioc/api/sop-service/sop`

The SOP instance resource defines additional subresources. The URIs for the subresources are described in subsequent sections.

17.6.3 When to use the SOP instance resource

Submit the following calls to the SOP instance resource to launch a new SOP instance and to step through the SOP actions:

- Retrieve all SOP definitions: Get a list of SOP definitions and inspect the properties of each definition to find the SOP that you want to launch.
- Launch SOP instance: The SOP instance ID, activities, and other fields are returned in the response.
- Get activity instance: Inspect an activity type and state.
- Start, stop, skip and complete SOP activity: Submit whatever request is appropriate for the action.

After the SOP instance has been launched, you can use the start, stop, skip, and complete actions to complete the instance of the SOP.

17.6.4 SOP instance properties

| Name | | Type | Description |
|---------------|-------|---------|------------------------------------------------------------------------------------------------------------------------------------------|
| cancel_Event | | Boolean | Legacy |
| uid | | Integer | ID used in querying this SOP |
| archived | | Boolean | Indicates that the SOP instance has been deprecated and should not be used |
| author | | String | SOP creator |
| description | | String | User-supplied SOP description |
| name | | String | User-supplied SOP name |
| ordered | | Boolean | Indicates whether the activities in the SOP need to be executed sequentially or in any order. |
| statusString | | String | Indicates the status of this SOP definition object, where possible values are SOP_UNKNOWN, SOP_DRAFT, SOP_PENDING_APPROVAL, SOP_APPROVED |
| status | | Integer | Numerical code for the status, valid values SOP_UNKNOWN=0, SOP_DRAFT=1, SOP_PENDING_APPROVAL=2, SOP_APPROVED=3 |
| sopDefinition | | Object | |
| | \$ref | String | Relative URL to the sopDefinition that is related to this SOP instance |
| comment | | Object | |
| | \$ref | String | Relative URL to comments for this SOP instance |
| changeLog | | Object | |
| | \$ref | String | Relative URL to the change log for this SOP instance |
| reference | | Object | |
| | \$ref | String | Relative URL to this SOP's references, see reference properties |
| roleAccess | | Object | |

| Name | | Type | Description |
|---------------------|------------|--------------|-----------------------------------------------------------------------------------------------------------------|
| | \$ref | String | Relative URL to role access data for this SOP instance |
| activity | | Object | |
| | \$ref | String | Relative URL to activities associated with this SOP instance |
| creator | | String | Creator of this SOP instance |
| actualStartTs | | Integer | Start time of this SOP instance |
| accessType | | String | Valid values ACCESS_NONE, ACCESS_READ_ONLY, ACCESS_READ_WRITE |
| actions | | Object Array | |
| | actionName | String | Valid value is "action." + user-supplied name of the action; for example, "action.callPolice" |
| | actionUri | String | For example, "sopDefinition/222/callPolice". Note that a forward slash is not appended at the beginning of URL. |
| event | | Object | Unused |
| actualStartTsString | | String | Human readable string of when this SOP instance was started. |

17.6.5 Supported HTTP methods

| Method | Authorized users | SOP owner | SOP reader | SOP admin | SOP author |
|--------|------------------|-----------|------------|-----------|------------|
| GET | No | Yes | Yes | Yes | Yes |
| POST | No | Yes | No | Yes | Yes |
| DELETE | No | Yes | No | Yes | Yes |

17.6.6 GET methods

The GET methods for the SOP instance resource and subresources are described in the following sections.

Response content

MIME type: application/json. See the SOP instance property description for a complete list of properties that are returned in the response.

17.6.7 Get SOP instances

Use the GET method for the sop resource to get one or more SOP instances.

Resource URI

/ibm/ioc/api/sop-service/sop

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|------------------|--------|-----------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance to get |

Query parameters

| Name | Type | Description |
|---------------|---------|-----------------------------------------------------------------------------------------------------------------------------|
| name | String | Optional SOP name filter |
| datasourceid | String | Include only instances that are associated with a defined data source ID |
| includeDetail | Boolean | Include data in the response about all activities that are associated with each instance, the default value is <i>false</i> |
| objectid | String | Include only instances that are associated with a defined object ID |

Sample response content

```
[
  {
    "uid": 993,
    "cancel_Event": false,
    "archived": false,
    "description": "Each Kind Of Activity",
    "name": "Activity Selection",
    "ordered": true,
    "statusString": "SOP_STARTED",
    "status": 2,
    "activity": {
      "$ref": "/sop/993/activity"
    },
    "sopDefinition": {
      "$ref": "/sopdefinition/857"
    },
    "changeLog": {
      "$ref": "/sop/993/changeLog"
    },
    "comment": {
      "$ref": "/sop/993/comment"
    },
    "reference": {
      "$ref": "/sop/993/reference"
    },
    "roleAccess": {
      "$ref": "/sop/993/roleAccess"
    },
    "creator": "wpsadmin",
    "pastDue": "0",
    "dueToday": "0",
    "dueFuture": "0",
    "actualStartTs": 1381316317455,
```

```
"accessType": "ACCESS_READ_WRITE",
"actions": [
  {
    "actionName": "action.stop",
    "actionUri": "/sop/993/stop"
  },
  {
    "actionName": "action.addReference",
    "actionUri": "/sop/993/reference"
  },
  {
    "actionName": "action.exportSopInstance",
    "actionUri": "exportsopinstance/993"
  },
  {
    "actionName": "action.addComment",
    "actionUri": "/sop/993/comment"
  }
],
"event": {
  "$ref": "/sop/993/event"
},
"actualStartTsString": "Oct 9, 2013 11:58:37 AM"
},
{
  "uid": 1206,
  "cancel_Event": false,
  "archived": false,
  "description": "Each Kind Of Activity",
  "name": "Activity Selection",
  "ordered": true,
  "statusString": "SOP_STARTED",
  "status": 2,
  "activity": {
    "$ref": "/sop/1206/activity"
  },
  "sopDefinition": {
    "$ref": "/sopdefinition/1020"
  },
  "changeLog": {
    "$ref": "/sop/1206/changeLog"
  },
  "comment": {
    "$ref": "/sop/1206/comment"
  },
  "reference": {
    "$ref": "/sop/1206/reference"
  },
  "roleAccess": {
    "$ref": "/sop/1206/roleAccess"
  },
  "creator": "wpsadmin",
  "pastDue": "0",
  "dueToday": "0",
  "dueFuture": "0",
  "actualStartTs": 1381421123101,
  "accessType": "ACCESS_READ_WRITE",
```

```
"actions": [
  {
    "actionName": "action.stop",
    "actionUri": "/sop/1206/stop"
  },
  {
    "actionName": "action.addReference",
    "actionUri": "/sop/1206/reference"
  },
  {
    "actionName": "action.exportSopInstance",
    "actionUri": "exportsopinstance/1206"
  },
  {
    "actionName": "action.addComment",
    "actionUri": "/sop/1206/comment"
  }
],
"event": {
  "$ref": "/sop/1206/event"
},
"actualStartTsString": "Oct 10, 2013 5:05:23 PM"
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.8 Get change log for an SOP instance

Use the GET method for the changeLog subresource to get the change log for an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}/changeLog

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|------------------|--------|------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance to get the change log for |

Sample response content

```
[
  {
    "uid": 1238,
    "attribute": "description",
    "changeTs": 1381484629241,
    "from": "ok",
    "to": "Updated Description",
    "sop": {
      "$ref": "/sop/1085",
      "name": "Updated Name",
      "status": 2
    },
    "user": "wpsadmin",
    "actualStartTsString": "Oct 11, 2013 10:43:49 AM"
  },
  {
    "uid": 1237,
    "attribute": "name",
    "changeTs": 1381484629239,
    "from": "Copy Of disp",
    "to": "Updated Name",
    "sop": {
      "$ref": "/sop/1085",
      "name": "Updated Name",
      "status": 2
    },
    "user": "wpsadmin",
    "actualStartTsString": "Oct 11, 2013 10:43:49 AM"
  }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.9 Get comments for an SOP instance

Use the GET method for the comment subresource to get the comments for an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}/comment

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|------------------|--------|------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance to get the change log for |

Sample response content

```
[{
  "uid": 263,
  "comment": "This is a sample comment",
  "commentTs": 1376357588452,
  "user": "wpsadmin",
  "sop": {
    "$ref": "/sop/253",
    "name": "aaaa",
    "status": 2
  },
  "actualStartTsString": "Aug 13, 2013 1:33:08 AM"
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.10 Get roles for an SOP instance

Use the GET method for the roleAccess subresource to get a list of roles for an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_INSTANCE_UID}/roleAccess

Path parameters

| Name | Type | Description |
|------------------|--------|------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance to get the change log for |

Sample response content

```
[{
  "uid": 29,
  "roleName": "CityWideAdmin",
  "accessTypeString": "ACCESS_READ_WRITE",
  "accessType": 2
},
{
  "uid": 30,
  "roleName": "CityWideOperator",
  "accessTypeString": "ACCESS_READ_ONLY",
  "accessType": 1
}]
```

17.6.11 Get references for an SOP instance

Use the GET method for the reference subresource to get a list of the references for an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_INSTANCE_UID}/reference

Path parameters

| Name | Type | Description |
|------------------|--------|------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance to get the change log for |

Sample response content

```
[
  {
    "uid": 367,
    "archived": false,
    "description": "NOTIFICATION",
    "name": "Fire Website",
    "priv": false,
    "uri": "http://www.firesafety.org"
  },
  {
    "uid": 202,
    "archived": false,
    "author": "wpsadmin",
    "description": "News Source",
    "name": "RTE News",
    "priv": false,
    "uri": "http://www.rte.ie/news"
  }
]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.12 Get activities for an SOP instance

Use the GET method for the activity subresource to get the activity instances for an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}/activity

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|------------------|--------|-------------------------------------------------------|
| SOP_INSTANCE_UID | String | The UID of the SOP instance to get the change log for |

Sample response content

See the activity resource section for details about the activity properties.

```
[{
  "uid": 598,
  "required": true,
  "actualStartTs": 1381321657254,
  "description": "des",
  "duration": 1,
  "durationUnit": 3,
  "durationUnitString": "durationMinutes",
  "actOrder": 1,
  "name": "Evacuate Building",
  "statusString": "ACT_STARTED",
  "status": 3,
  "userOwner": "wpsadmin",
  "activityDefinition": {
    "$ref": "/activity/598/activityDefinition"
  },
  "activityType": {
    "uid": 0,
    "description": "",
    "name": "ifThenElseActivity",
    "widget": "IfThenElseActivityTypePanel",
    "icon": "",
```

```
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  },
  "sop": {
    "$ref": "/sop/597",
    "name": "Launch Test Def",
    "status": 2
  },
  "activityProperties": [
    {
      "uid": 601,
      "propertyValue": "51",
      "activityTypeProperty": {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      }
    },
    {
      "uid": 602,
      "propertyValue": "363",
      "activityTypeProperty": {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    }
  ],
  "changeLog": {
    "$ref": "/activity/598/changeLog"
  },
  "comment": {
    "$ref": "/activity/598/comment"
  },
  "roleAccess": {
    "$ref": "/activity/598/roleAccess"
  },
  "reference": {
    "$ref": "/activity/598/reference"
  },
  "accessType": "ACCESS_READ_WRITE",
  "pastDue": true,
  "dueToday": false,
  "dueFuture": false,
  "actions": [
    {
      "actionName": "action.addReference",
      "actionUri": "/activity/598/reference"
    },
    {
      "actionName": "action.addComment",
```

```
        "actionUri": "/activity/598/comment"
      }
    ],
    "actualStartTsString": "Oct 9, 2013 12:27:37 PM",
    "expectedEnd": 1381245935661,
    "expectedEndTsString": "Oct 8, 2013 3:25:35 PM",
    "triggeredSop": null,
    "canComplete": false
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.13 POST methods

The POST methods for the SOP instance resource and subresources are described in the following sections.

Request content

MIME type: application/json.

Response content

MIME type: application/json. See the SOP instance property description for a complete list of the properties that are returned in the response.

17.6.14 Launch an SOP instance

Use the POST method with the `sopDefinitionId` query parameter to launch an SOP. The response content contains the newly created SOP instance. You must use the ID of an approved SOP definition. If you attempt to create an instance of a draft SOP definition, the request fails and the server returns an error code of 500.

Resource URI

`/ibm/ioc/api/sop-service/sop?sopDefinitionId={SOP_DEFINITION_ID}`

Query parameters

| Name | Type | Description |
|-------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>sopDefinitionId</code> | String | The ID of the SOP definition to launch |
| <code>forceNewInstance</code> | Boolean | By default, if an instance of an SOP definition is already active, subsequent requests to launch an instance of that SOP fail. Set this value to true to force an additional instance of that SOP to launch. |

Sample POST request content

```
{
  "DATASOURCEID": 0,
  "OBJECTID": 0
}
```

Sample response content

```
{
  "uid": 597,
  "cancel_Event": false,
  "archived": false,
  "description": "test",
  "name": "Launch Test Def",
  "ordered": false,
  "statusString": "SOP_STARTED",
  "status": 2,
  "activity": {
    "$ref": "/sop/597/activity"
  },
  "sopDefinition": {
    "$ref": "/sopdefinition/584"
  },
  "changeLog": {
    "$ref": "/sop/597/changeLog"
  },
  "comment": {
    "$ref": "/sop/597/comment"
  },
  "reference": {
    "$ref": "/sop/597/reference"
  },
  "roleAccess": {
    "$ref": "/sop/597/roleAccess"
  },
  "creator": "wpsadmin",
  "actualStartTs": 1381245875661,
  "accessType": "ACCESS_NONE",
  "actions": [
    {
      "actionName": "action.addComment",
      "actionUri": "/sop/597/comment"
    }
  ],
  "event": {
    "$ref": "/sop/597/event"
  }
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.15 Update an SOP instance

Use the POST method to update the name and description of an instance of an SOP. You must use different requests to edit activities and references that relate to an instance of an SOP.

Resource URI

/ibm/ioc/api/sop-service/sop/

Sample POST request content

```
{  
  "uid": 597,  
  "name": "Launch Test Def",  
  "description": "test 2"  
}
```

Sample Response Content

The response content is similar to the response content that is returned from a create instance request. The entire SOP instance object, with the updated values, is returned in the response content.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.16 Add a comment to an SOP instance

Use the POST method for the comment subresource to add a comment to an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}/comment

Path parameters

| Name | Type | Description |
|------------------|--------|---------------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance that the comment is to be added to |

Sample POST request content

```
{
  "name": "This is a sample comment"
}
```

Sample Response Content

The entire SOP instance object is returned in the response content.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.17 Add a reference to an SOP instance

Use the POST method for the reference subresource to add a reference to an SOP instance. You must pass the ID of the reference to be added to the SOP definition in the request content.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}/reference

Path parameters

| Name | Type | Description |
|------------------|--------|-----------------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance that the reference is to be added to |

Sample request content

```
{
  "name": "IBM",
  "description": "IBM Website",
  "uri": "http://www.ibm.com",
  "uid": 10
}
```

Sample response content

If the POST request is successful, the reference is returned in the response. See the reference resource section for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.18 Update SOP instance roles

Use the POST method for the sop resource to update the SOP instance roles. You must supply the SOP instance ID in the request content. You can alter owners and readers of activities by adding or removing them from the `roleAccess` argument array. Supply items as shown in the following sample request. For `accessType`, assign a value of 1 for readers and 2 for owners. Assign appropriate values for `roleName`. The value of `roleName` is not validated, so if you supply the name of a role that does not exist, you will still receive a "200 OK" response and the non-existent role will be displayed in the list of owners and readers in the user interface.

Resource URI

/ibm/ioc/api/sop-service/sop/{SOP_INSTANCE_UID}

Path parameters

| Name | Type | Description |
|------------------|---------|-----------------------------------------------------------|
| SOP_INSTANCE_UID | Integer | The ID of the SOP instance whose roles you want to update |

Sample POST request content

```
{
  "uid": 785,
  "roleAccess": [
    {
      "roleName": "TestGroup3",
      "accessType": 2
    },
    {
      "roleName": "TestGroup4",
      "accessType": 1
    }
  ]
}
```

```
        "roleName": "wpsadmins",  
        "accessType": 2  
    }  
]  
}
```

Sample Response Content

If the POST request is successful, the SOP definition is returned in the response. See the SOP definition property description for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.19 Send notification email

Use the POST method for the sendNotification subresource to send an email notification. The request content contains the email to be sent. Before you use this request, the MailServerHostman, MailServerPort and MailSender system properties must be configured in IBM Intelligent Operations Center.

Resource URI

/ibm/ioc/api/sop-service/sop/sendNotification

Sample POST request content

```
{  
  "recipients": "someone@ibm.com",  
  "subject": "Fire Notification",  
  "body": "\nActivity: Notification Activity\nDescription auto\nOwner: undefined\nStatus: ACT_ACTIVE\n\nSOP: Activity Selection\nDescription Each Kind Of Activity\nOwner: undefined\nStatus: SOP_STARTED\n",  
  "user": "someone",  
  "password": "someone's password"  
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.20 DELETE methods

The DELETE methods for the SOP instance resource and subresources are described in the following sections.

17.6.21 Remove a reference from an SOP instance

Use the DELETE method with the reference subresource to remove a reference from an SOP definition.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_INSTANCE_UID}/reference/{REFERENCE_UID}

Path parameters

| Name | Type | Description |
|------------------|---------|------------------------------------------------------------------------------|
| SOP_INSTANCE_UID | String | The ID of the SOP instance that the reference is to be removed from |
| REFERENCE_UID | Integer | The ID of the reference resource that is to be removed from the SOP instance |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.6.22 Delete an SOP instance

Use the DELETE method to delete an SOP instance.

Resource URI

/ibm/ioc/api/sop-service/sopDefinition/{SOP_DEFINITION_UID}

Path parameters

| Name | Type | Description |
|------------------|---------|--------------------------------------|
| SOP_INSTANCE_UID | Integer | The ID of the SOP instance to delete |

HTTP return codes

| Code | Description | |
|------|-----------------------|---------------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7 Activity instance resource

Use the activity instance resource to start, stop, skip, complete, and add comments to activity instance resources. Activity instances are created for each SOP activity definition when the SOP is launched.

17.7.1 Data service class

There is no data service class for this resource.

17.7.2 Resource URI

/ibm/ioc/api/sop-service/activity

The activity resource defines additional subresources. The URIs for the subresources are described in subsequent sections.

17.7.3 Activity instance properties

| Name | Type | Description |
|--------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| uid | Integer | ID to use for querying this activity |
| required | Boolean | Whether or not this activity must be completed |
| actualStartTs | Integer | Time at which the activity started |
| description | String | User-supplied description of this activity |
| duration | Integer | Number of the duration units of which this activity takes |
| durationUnit | Integer | 0 for none, 1 for minutes, 2 for hours, 3 for days |
| durationUnitString | String | String representation of the duration unit; for example, <code>durationMinutes</code> |
| actOrder | Integer | Order in which this activity is to be executed relative to other activities in the SOP, where the first activity has an <code>actOrder</code> value of 1 |
| name | String | Activity name |

| Name | | Type | Description |
|--------------------|----------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| statusString | | String | ACT_UNKNOWN, ACT_ACTIVE, ACT_WAITING, ACT_STARTED, ACT_SKIPPED, ACT_AUTO_STARTED, ACT_AUTO_DEFINED, ACT_AUTO_EXCEPTION, ACT_AUTO_COMPLETED, ACT_COMPLETED |
| status | | Integer | Numerical status value: ACT_UNKNOWN=0, ACT_ACTIVE=1, ACT_WAITING=2, ACT_STARTED=3, ACT_SKIPPED=4, ACT_AUTO_STARTED=5, ACT_AUTO_DEFINED=6, ACT_AUTO_EXCEPTION=7, ACT_AUTO_COMPLETED=8, ACT_COMPLETED=9 |
| userOwner | | String | Activity owner |
| activityDefinition | | Object | |
| | \$ref | String | Relative URL to this activity's activity definition |
| activityType | | Object | Activity type properties, this property is not required for manual activities |
| | uid | Integer | If/Else: 0 Notification: 1 SOP: 3 REST: 4 Automation: 5 |
| | description | String | Activity type description, not required |
| | name | String | If/Else: ifTheElseActivity Notification: notificationActivity SOP: sopActivity REST: restActivity Automation: automationActivity |
| | widget | String | If/Else: IfThenElseActivityTypePanel Notification: NotificationActivityTypePanel SOP: SopActivityTypePanel REST: RestActivityTypePanel Automation: TSRMActivityPanel |
| | icon | String | Not required |
| | activityTypeProperty | Object | See activityTypeProperty attribute of activityDefinitionProperty that is described in activity definition properties |
| sop | | Object | |
| | \$ref | String | Relative URL to instances of this activity's sop |
| | name | String | SOP name |
| | status | Integer | SOP status |
| activityProperties | | Object Array | See the activityDefinitionProperty that is described in activity definition properties |
| | uid | Integer | - |
| | propertyValue | String | - |
| | activityTypeProperty | String | - |
| changeLog | | Object | |

| Name | | Type | Description |
|---------------------|------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | \$ref | String | Relative URL to instances of this activity's change log |
| comment | | Object | |
| | \$ref | String | Relative URL to the change log of this activity's comments |
| roleAccess | | Object | |
| | \$ref | String | Relative URL to this activity's role access information |
| reference | | Object | |
| | \$ref | String | Relative URL to this activity's references, see reference properties |
| accessType | | String | Valid values are <code>ACCESS_NONE</code> , <code>ACCESS_READ_ONLY</code> , <code>ACCESS_READ_WRITE</code> |
| pastDue | | Boolean | Indicates whether the activity should have been completed by the current date |
| dueToday | | Boolean | Indicates whether the activity is due to be completed today |
| dueFuture | | Boolean | Indicates whether the activity is due to be completed in the future. |
| actions | | Object Array | |
| | actionName | String | Valid format is "action." + user-supplied name of the action; for example, "action.callPolice" |
| | actionUri | String | Relative URL to this action; for example, "sopDefinition/222/callPolice". Note that a forward slash is not appended to the beginning of the URL, unlike most other responses |
| actualStartTsString | | String | String representation of when the activity started |
| expectedEnd | | Integer | Timestamp for expected end of this activity |
| expectedEndTsString | | String | Human-readable timestamp for expected end of this activity |
| canComplete | | Boolean | The calling user can complete the activity |

17.7.4 Supported HTTP methods

| Method | Authorized users | SOP owner | SOP reader | SOP admin | SOP author |
|--------|------------------|-----------|------------|-----------|------------|
| GET | No | Yes | Yes | Yes | Yes |
| POST | No | Yes | No | Yes | Yes |

17.7.5 GET method

Use the GET method to get one or more activity instance resources.

Caution: You can use the previous resource URI only to submit GET requests. You must not use the resource URI to update an activity instance. To update activity instances, you must submit POST requests to a different URI. For more information, see the POST

section. If you submit PUT requests to the previous resource URI, the server returns a 200 error code that seems to indicate successful completion. However, any fields that are not provided in the request are reset in the stored activity, instead of the fields retaining their existing values. Consequently, the activity might enter an erroneous state.

Header parameters

| Name | Type | Description |
|----------|---------|-------------------------------------------------------------|
| tzoffset | Integer | Format version according to this offset in minutes from GMT |

Path parameters

| Name | Type | Description |
|-----------------------|---------|-------------------------------------------------|
| ACTIVITY_INSTANCE_UID | Integer | The ID of the activity instance resource to get |

Response content

MIME type: application/json. See the activity instance property description for a complete list of the properties that are returned in the response.

Sample Response Content

```
[{
  "uid": 598,
  "required": true,
  "actualStartTs": 1381321657254,
  "description": "des",
  "duration": 1,
  "durationUnit": 3,
  "durationUnitString": "durationMinutes",
  "actOrder": 1,
  "name": "Evacuate Building",
  "statusString": "ACT_STARTED",
  "status": 3,
  "userOwner": "wpsadmin",
  "activityDefinition": {
    "$ref": "/activity/598/activityDefinition"
  },
  "activityType": {
    "uid": 0,
    "description": "",
    "name": "ifThenElseActivity",
    "widget": "IfThenElseActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  }
},
]
```

```
"sop": {
  "$ref": "/sop/597",
  "name": "Launch Test Def",
  "status": 2
},
"activityProperties": [
  {
    "uid": 601,
    "propertyValue": "51",
    "activityTypeProperty": {
      "uid": 4,
      "name": "thenSopDefVersionUid"
    }
  },
  {
    "uid": 602,
    "propertyValue": "363",
    "activityTypeProperty": {
      "uid": 5,
      "name": "elseSopDefVersionUid"
    }
  }
],
"changeLog": {
  "$ref": "/activity/598/changeLog"
},
"comment": {
  "$ref": "/activity/598/comment"
},
"roleAccess": {
  "$ref": "/activity/598/roleAccess"
},
"reference": {
  "$ref": "/activity/598/reference"
},
"accessType": "ACCESS_READ_WRITE",
"pastDue": true,
"dueToday": false,
"dueFuture": false,
"actions": [
  {
    "actionName": "action.addReference",
    "actionUri": "/activity/598/reference"
  },
  {
    "actionName": "action.addComment",
    "actionUri": "/activity/598/comment"
  }
],
"actualStartTsString": "Oct 9, 2013 12:27:37 PM",
"expectedEnd": 1381245935661,
"expectedEndTsString": "Oct 8, 2013 3:25:35 PM",
"triggeredSop": null,
"canComplete": false
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7.6 POST methods

The POST methods for the activity instance resource and subresources are described in the following sections.

Request content

MIME type: application/json.

Response content

MIME type: application/json. See the activity instance property description for a complete list of the properties that are returned in the response.

17.7.7 Update activity instance

Use the POST method to update an activity instance. You can alter owners and readers of activities by adding or removing them from the `roleAccess` argument array. Supply items as shown in the following sample request. For `accessType`, assign a value of 1 for readers and 2 for owners. Assign appropriate values for `roleName`. The value of `roleName` is not validated, so if you supply the name of a role that does not exist, you will still receive a "200 OK" response and the non-existent role will be displayed in the list of owners and readers in the user interface.

You must supply the ID of the activity but you do not need to supply any other field that is not being updated. For example, if you supply a `roleAccess` argument of `[]`, then all the owners and readers are cleared. If you supply no `roleAccess` argument, then the existing values are retained.

Resource URI

`/ibm/ioc/api/sop-service/sop/activity`

Sample POST request content

```
{
  "name": "A SOP Activity",
  "durationUnit": "1",
  "description": "an activity description",
  "duration": 2,
  "uid": 281,
  "actOrder": 2,
  "roleAccess": [
```

```
{
  {
    "roleName": "wpsadmins",
    "accessType": 2
  },
  {
    "roleName": "TestGroup5",
    "accessType": 1
  }
],
"userOwner": "wpsadmin2",
"activityType": null
}
```

Sample Response Content

```
{
  "uid": 281,
  "required": true,
  "actOrder": 2,
  "description": "an activity description",
  "durationUnitString": "durationDays",
  "durationUnit": 1,
  "duration": 2,
  "name": "A SOP Activity",
  "changeLog": {
    "$ref": "/activity/281/changeLog"
  },
  "activityProperty": [],
  "reference": [
    {
      "uid": 367,
      "archived": false,
      "description": "Safety measures",
      "name": "Fire Website",
      "priv": false,
      "uri": "http://www.firesafety.org"
    }
  ],
  "sop": {
    "$ref": "/sop/275"
  },
  "roleAccess": [
    {
      "uid": 0,
      "roleName": "wpsadmins",
      "accessTypeString": "ACCESS_READ_WRITE",
      "accessType": 2
    },
    {
      "uid": 0,
      "roleName": "TestGroup5",
      "accessTypeString": "ACCESS_READ_ONLY",
      "accessType": 1
    }
  ],
  "accessType": "ACCESS_NONE",
  "userOwner": "wpsadmin2"
}
```

```
}
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7.8 Start, stop, skip, and complete activity

Use the POST method for the start, stop, skip, and complete subresources to start, stop, skip, and complete an SOP activity.

Resource URIs

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/start

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/stop

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/skip

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/complete

Resource URIs for start, stop, and if-then-else activity

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/startThen

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/startElse

Path parameters

| Name | Type | Description |
|----------------------|--------|-------------------------|
| ACTIVITY_INSTANCE_ID | String | ID of activity instance |

Sample response content

If the POST request is successful, the activity object is returned in the response with the updated status string. See the activity instance property description for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7.9 Add a comment to an activity

Use the POST method for the comment subresource to add a comment to an activity instance.

Resource URI

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/comment

Path parameters

| Name | Type | Description |
|----------------------|--------|-------------------------|
| ACTIVITY_INSTANCE_ID | String | ID of activity instance |

Sample POST request content

```
{  
  "comment": "The new comment"  
}
```

Sample response content

If the POST request is successful, the activity object is returned in the response. See the activity instance property description for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7.10 Add a reference to an activity

Use the POST method for the reference subresource to add a reference to an activity instance. To add a reference to an activity instance, you must pass the ID of the reference to be added in the request content.

Resource URI

/ibm/ioc/api/sop-service/activity/{ACTIVITY_INSTANCE_ID}/reference

Path parameters

| Name | Type | Description |
|------------------------|--------|----------------------------------------------------------------------|
| {ACTIVITY_INSTANCE_ID} | String | The ID of the activity instance that the reference is to be added to |

Sample request content

```
{
  "uid": 367,
  "description": "NOTIFICATION",
  "name": "Fire Website",
  "priv": true,
  "uri": "http://www.firesafety.org",
  "archived": false
}
```

Sample request content

If the POST request is successful, the activity object is returned in the response. See the activity instance property description for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.7.11 Update activity roles

Use the POST method for the activity resource to update the roles for an activity instance. The activity instance uid needs to be supplied in the request content. You can alter owners and readers of activities by adding or removing them from the `roleAccess` argument array. Supply items as shown in the following sample request. For `accessType`, assign a value of 1 for readers and 2 for owners. Assign appropriate values for `roleName`. The value of `roleName` is not validated, so if you supply the name of a role that does not exist, you will still receive a "200 OK" response and the non-existent role will be displayed in the list of owners and readers in the user interface.

Resource URI

/ibm/ioc/api/sop-service/activity

Path parameters

| Name | Type | Description |
|-----------------------|---------|---------------------------------|
| ACTIVITY_INSTANCE_UID | Integer | The ID of the activity instance |

Sample POST request content

```
{
  "uid": 785,
  "roleAccess": [
    {
      "roleName": "TestGroup3",
      "accessType": 2
    },
    {
      "roleName": "TestGroup4",
      "accessType": 1
    },
    {
      "roleName": "wpsadmins",
      "accessType": 2
    }
  ]
}
```

Sample Response Content

If the POST request is successful, the SOP definition is returned in the response. See the [SOP definition](#) property description for a complete list of the properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

17.8 Configuration resource

Use the configuration resource to get activity types and notification reference definitions.

17.8.1 Data service class

There is no data service class for this resource

17.8.2 Resource URI

/ibm/ioc/api/sop-service/configuration

17.8.3 Supported HTTP methods

| Method | Authorized users |
|--------|------------------|
| GET | Yes |

17.8.4 GET Methods

The GET methods for the SOP configuration subresources are described in the following sections.

Response content

MIME type: application/json.

17.8.5 Get all notification reference definitions

Use the GET method with the notification subresource to get a list of email templates.

Resource URI

/ibm/ioc/api/sop-service/configuration/notification

Sample Response Content

```
[
  {
    "uid": 367,
    "archived": false,
    "description": "NOTIFICATION",
    "name": "Fire Website",
    "priv": false,
    "uri": "http://www.firesafety.org"
  }
]
```

17.8.6 Get all activity types

Use the GET method with the activityType subresource to get a list of activity types.

Resource URI

/ibm/ioc/api/sop-service/configuration/activityType

Sample Response Content

```
[
  {
    "uid": 5,
    "description": "",
    "name": "automationActivity",
    "widget": "TSRMAutomationPanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 13,
        "name": "name"
      }
    ]
  },
  {
    "uid": 0,
    "description": "",
    "name": "ifThenElseActivity",
    "widget": "IfThenElseActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 4,
        "name": "thenSopDefVersionUid"
      },
      {
        "uid": 5,
        "name": "elseSopDefVersionUid"
      }
    ]
  },
  {
    "uid": 1,
    "description": "",
    "name": "notificationActivity",
    "widget": "NotificationActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 6,
        "name": "uid"
      }
    ]
  },
  {
    "uid": 4,
    "description": "",
    "name": "restActivity",
    "widget": "RestActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
      {
        "uid": 0,
        "name": "restURL"
      }
    ]
  }
]
```

```
        {
            "uid": 1,
            "name": "restUid"
        },
        {
            "uid": 2,
            "name": "restPwd"
        }
    ]
},
{
    "uid": 3,
    "description": "",
    "name": "sopActivity",
    "widget": "SopActivityTypePanel",
    "icon": "",
    "activityTypeProperty": [
        {
            "uid": 3,
            "name": "sopDefVersionUid"
        }
    ]
}
]
```

18 System property service

The system property service provides access to system-wide IBM Intelligent Operations Center configuration properties.

18.1 Base URI

/ibm/ioc/api/sysprop-service

18.2 Sysprops resource

Use the sysprops resource to get, create, update, and delete system properties.

18.2.1 Data service class

com.ibm.ioc.sysprop.SyspropDataService

See the Java API documentation in the [IBM Intelligent Operations Center 1.6 product documentation](#) for more information about this data service class.

18.2.2 Resource URI

/ibm/ioc/api/sysprop-service/sysprops

18.2.3 Supported HTTP methods

| Method | Authorized users | Administrative users |
|--------|------------------|----------------------|
| GET | Yes | Yes |
| POST | No | Yes |
| PUT | No | Yes |
| DELETE | No | Yes |

18.2.4 GET method

Use the GET method to get one or more sysprop resources.

Path parameters

| Name | Type | Description |
|------|---------|--------------------------------------|
| id | Integer | The ID of the system property to get |

Query parameters

| Name | Type | Description |
|--------|--------|---------------------------------|
| locale | String | The language locale |
| name | String | The name of the system property |

Response content

MIME type: application/json

Properties:

| Name | Type | Description |
|-----------------|--------------|---------------------------------------------------------------------------------------------------------------------|
| id | Integer | Resource ID |
| group | String | System property group |
| name | String | System property name |
| value | String | System property value |
| description | String | System property description |
| i18nDescription | String | Translated description system property description, where the translated value ID is based on the locale parameter. |
| lastUpdateDate | Long | Timestamp that indicates when the resource was last updated |
| messages | String array | List of messages that are optionally returned by the service |

Sample response content

```
[{
  "group": null,
  "name": "AnalyticServerHostname",
  "value": "ioc2bvt2ana.rtp.raleigh.ibm.com",
```

```
    "description":
"{\\"group\\":\\"Sysprop\\",\\"key\\":\\"AnalyticServerHostname\\"}",
    "i18nDescription": "Analytics server host name",
    "id": 11,
    "lastUpdateDate": 1378752413667,
    "messages": []
},
{
    "group": null,
    "name": "AnalyticServerReportAdminPort",
    "value": "9444",
    "description":
"{\\"group\\":\\"Sysprop\\",\\"key\\":\\"AnalyticServerReportAdminPort\\"}",
    "i18nDescription": "IBM Cognos Gateway secure port",
    "id": 21,
    "lastUpdateDate": 1378752413691,
    "messages": []
},
{
    "group": null,
    "name": "ApplicationServerHostname",
    "value": "ioc2bvt2app.rtp.raleigh.ibm.com",
    "description":
"{\\"group\\":\\"Sysprop\\",\\"key\\":\\"ApplicationServerHostname\\"}",
    "i18nDescription": "Application server host name",
    "id": 10,
    "lastUpdateDate": 1378752413665,
    "messages": []
},
{
    "group": null,
    "name": "CacheKpis",
    "value": "true",
    "description": "{\\"group\\":\\"Sysprop\\",\\"key\\":\\"CacheKpis\\"}",
    "i18nDescription": "Specifies whether KPIs are cached
(true/false)",
    "id": 40,
    "lastUpdateDate": 1378752413758,
    "messages": []
}]
```

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion, the requested data was returned. Note that the list might be empty |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to get the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 500 | Internal server error | An error occurred while the request was being processed |

18.2.5 POST method

Use the POST method to create a system property.

Request content

MIME type: application/json

Parameters:

| Name | Type | Required | Description |
|-------------|--------|----------|-----------------------------|
| group | String | No | System property group |
| name | String | Yes | System property name |
| value | String | Yes | System property value |
| description | String | No | System property description |

Sample POST request content

```
{
  "group": "sample group",
  "name": "new system property",
  "value": "new system property value"
}
```

Response content

MIME type: application/json

If the POST request is successful, the new system property is returned in the response. See the GET method for a complete list of properties that are returned in the response.

HTTP return codes

| Code | Description | |
|------|-----------------------|-------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to create the resource |
| 403 | Forbidden | Not allowed to create the resource |
| 405 | Method not allowed | A request was made to the resource by using a request method that is not supported by the resource |
| 500 | Internal server error | An error occurred while the request was being processed |

18.2.6 PUT method

Use the PUT method to update a system property.

Path parameters

| Name | Type | Description |
|------|---------|---------------------------------------------|
| id | Integer | The ID of the system property to be updated |

Request content

MIME type: application/json.

For a complete list of the parameters that are passed in the request, see the previous property descriptions.

Response content

MIME type: application/json.

If the PUT request is successful, the updated resource is returned in the response. For a complete list of the properties that are returned in the response, see the previous property descriptions.

HTTP return codes

| Code | Description | |
|------|-----------------------|-----------------------------------------------------------------------------------------------------------------|
| 200 | OK | Successful completion |
| 400 | Bad request | The request either contains invalid parameters, or parameters and inputs are missing from the request |
| 401 | Unauthorized | Not authorized to update the resource |
| 403 | Forbidden | Not allowed to update the resource |
| 404 | Not found | The resource to be updated cannot be found |
| 409 | Conflict | The resource cannot be updated because the <code>lastUpdateDate</code> value is older than the current resource |
| 500 | Internal server error | An error occurred while the request was being processed |

18.2.7 DELETE method

Use the DELETE method to delete a system property.

Path parameters

| Name | Type | Description |
|------|---------|---------------------------------------------|
| id | Integer | The ID of the system property to be deleted |

HTTP return codes

| Code | Description | |
|------|--------------|--------------------------------------------------|
| 204 | No content | Returned when a resource is successfully deleted |
| 401 | Unauthorized | Not authorized to delete the resource |
| 403 | Forbidden | Not allowed to delete the resource |

| | | |
|-----|-----------------------|---------------------------------------------------------|
| 500 | Internal server error | An error occurred while the request was being processed |
|-----|-----------------------|---------------------------------------------------------|