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= GOBii API

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Overview

The GOBii web service API provides a comprehensive set of RESTful methods for accomplishing the following core tasks in the GOBii Genomic Data Management (GDM) system. This manual explains the GOBii web architecture and its web service operations.

Version information

Version : 1.0

License information

License : Apache 2.0
License URL : http://www.apache.org/licenses/LICENSE-2.0.html
Terms of service : null

URI scheme

Host : localhost:8081
BasePath : /api
Schemes : HTTP

Overview

GOBii's internal documentation explains in detail how the web service infrastructure is architected. It is not necessary for a consumer of the GOBii web API to understand this in great detail. However, knowing a few things about it will make it easier to understand the web method documentation.

Language and Framework

GOBii Web Services are implemented in Java with the Spring frameowrk. Virtually all calls conform to the same basic structure. For example, the /analyses POST method is as follows:

```
    @RequestMapping(value = "/analyses", method = RequestMethod.POST)
    @ResponseBody
    public PayloadEnvelope<AnalysisDTO> createAnalysis(@ApiParam(required = true)
@RequestBody PayloadEnvelope<AnalysisDTO> analysisPostEnvelope,
                                                       HttpServletRequest request,
                                                       HttpServletResponse response) {

        PayloadEnvelope<AnalysisDTO> returnVal = new PayloadEnvelope<>();

        // populate returnVal . . .

        return returnVal;
    }
```

Ther request and response are almost always wrapped in a type-parameterized PayloadEvenlope. In this case, the PayloadEnvelope is type-parameterized for the AnalysisDTO. Other methods are type parameterized according to the entity that they touch (e.g., the implementation of the /datasets POST method is type-parameterized for the DataSetDTO).

The DTO Payload

The DTO objects are lightweight classes that contain simple data properties. They correspond roughly but not exactly to entities in the database (for example, in some cases a DTO defines a child collection of foreign-keyed entitites).

For a client of this application, however, the strongly-typed nature of the implementation is irrelvant: all request responses and bodies are conveyed in plain JSON, and it is the application's job to serialize and deserialize accordingly. What a client implementation must take into account, however, is the structure of the DTO that pertains to a specific all. From the reference section for each web method in this document, youcan navigate to the DTO definition.

Request/Response Structure

The following illustrates the http body structure encompassed by the PayloadEnvelope. As mentioned above, it is the same for almost all responses as well as for the body of POST and PUT requests.

```
{
   "payload":{
      "linkCollection":{
         "linksPerDataItem":[

         ],
         "exploreLinksPerDataItem":[

         ]
      },
      "data":[

      ]
   },
   "header":{
      "gobiiProcessType":"",
      "dtoHeaderAuth":{
         "userName":null,
         "password":null,
         "token":"",
         "gobiiCropType":""
      },
      "status":{
         "succeeded":true,
         "statusMessages":[

         ],
         "statusMessagesByCode":{

         }
      },
      "pagination":null,
      "gobiiVersion":"2.0_2018-07-31",
      "cropType":""
   }
}
```


For requests, the following keys can be omitted:

- payload.linkCollection
- header

The content of the "data" array will vary depending on how the call is type-parameterized. For example, for a POST to the the /project resource, it will contain a project object, as defined by ProjectDTO.

Authentication

All calls except for /configsettings GET require a valid authentication token. The token can be acquired via a POST to the /auth resource with an empty body and the following request headers set:

- X-Username
- X-Password

The specified header values must, of course, be a valid GOBii username and password. Both values are expected to be unencrypted (https will provide encryption for the overall request stream).

GOBii users must be defined in the system's LDAP and in the GOBii contact table. Accordingly, there can be two types of authentication failures:

- 401 Unauthorized: the user does not authenticate to LDAP;
- 403 Forbidden: the contact record does not exist. In this case, the error will indicate "Missing contact info for user <user-name> in crop database <crop-db>; a contact record must have username = <user-name>";

When authentication succeeds, the response headers will contain an X-Auth-Token key whose value is a valid token. For subsequent requests, it is sufficient to supply X-Auth-Token in the request headers with the token that was received from the /auth POST. Some browsers prevent the client code from reading custom response headers. For such cases, the token value can also be retrieved from the "token" key in the "dtoHeaderAuth" object.

Error Handling

Errors internal to GOBii are reported in the "header" key accompanying the response. An example of how to retrieve error data is provided in the following code fragment.

```
if (!header.getStatus().isSucceeded() ||
        header
                .getStatus()
                .getStatusMessages()
                .stream()
                .filter(headerStatusMessage ->
headerStatusMessage.getGobiiStatusLevel().equals(GobiiStatusLevel.VALIDATION))
                .count() > 0) {
    returnVal = true;
    System.out.println();
    System.out.println("*** Header errors: ");
    for (HeaderStatusMessage currentStatusMesage :
header.getStatus().getStatusMessages()) {
        System.out.println(currentStatusMesage.getMessage());
    }
}
```

Paths

/analyses

```
POST /gobii/v1/analyses
```

Description

Creates an analysis entity. Consult the Request/Response Section before attempting to use this call.

Parameters

Type	Name	Schema
Body	**body** —	PayloadEnvelopeAnalysisDTO

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeAnalysisDTO

/analyses

```
GET /gobii/v1/analyses
```

Description

Retrieves an unfiltered list of all Analysis entities. Consult the Request/Response Section before attempting to use this call.

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeAnalysisDTO

/analyses

```
PUT /gobii/v1/analyses/{analysisId}
```

Description

Updates the Analysis entity having the specified analysisId. Consult the Request/Response Section before attempting to use this call.

Parameters

Type	Name	Description	Schema
Path	**analysisId** —	ID of Analysis to be updated	integer (int32)
Body	**body** —		PayloadEnvelopeAnalysisDTO

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeAnalysisDTO

/auth

```
POST /gobii/v1/auth
```

Description

The user credentials are specified in the request headers X-Username and X-Password; the response and the response headers include the token in the X-Auth-Token header. this header and value be included in the request headers for subsequent requests. The token value is also supplied in the dtoHeaderAuth object.

Parameters

Type	Name	Schema
Body	**body** —	string

Responses

HTTP Code	Description	Schema
200	successful operation	string

/configsettings

```
GET /gobii/v1/configsettings
```

Description

Provides generic configuration information about the GOBii instances in a given deployment. This call does not require authentication

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeConfigSettingsDTO

/restprofiles

```
PUT /gobii/v1/restprofiles
```

Description

When the Header of the payload envelope for a resource contains maxGet, maxPost, and maxPut values, this resource provides a means to update the max for a given rest resource ID and for a given HTTP verb. The values are transient in the sense that they will be confined only to a specific web service deployment. They are stored in the web service configurationdocument

Parameters

Type	Name	Schema
Body	**body** —	PayloadEnvelopeRestProfileDTO

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeRestProfileDTO

Definitions

AnalysisDTO

Name	Schema
algorithm __	string
allowedProcessTypes __	< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
analysisDescription __	string
analysisId __	integer (int32)
analysisName __	string
anlaysisTypeId __	integer (int32)
createdBy __	integer (int32)
createdDate __	string (date-time)
entityNameType __	enum (UNKNOWN, ANALYSIS, CONTACT, DATASET, CV, CVGROUP, PROJECT, ORGANIZATION, PLATFORM, MANIFEST, MAPSET, MARKER_GROUP, EXPERIMENT, REFERENCE, ROLE, DISPLAY, MARKER, PROTOCOL, VENDOR_PROTOCOL, DNASAMPLE, LINKAGE_GROUP, DNARUN, GERMPLASM, JOB)
id __	integer (int32)
modifiedBy __	integer (int32)
modifiedDate __	string (date-time)
parameters __	< EntityPropertyDTO > array
program __	string
programVersion __	string
referenceId __	integer (int32)
sourceName __	string

Name	Schema
sourceUri __	string
sourceVersion __	string
statusId __	integer (int32)
timeExecuted __	string (date-time)

ConfigSettingsDTO

Name	Schema
allowedProcessTypes __	< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
id __	integer (int32)
maxUploadSizeMbytes __	integer (int32)
serverCapabilities __	< string, boolean > map
serverConfigs __	< string, ServerConfigItem > map

EntityPropertyDTO

Name	Schema
entityIdId __	integer (int32)
propertyId __	integer (int32)
propertyName __	string
propertyValue __	string

Header

Name	Schema
cropType __	string
dtoHeaderAuth __	HeaderAuth

Name	Schema
gobiiProcessType __	enum (CREATE, READ, UPDATE, DELETE, NONE)
gobiiVersion __	string
maxGet __	integer (int32)
maxPost __	integer (int32)
maxPut __	integer (int32)
pagination __	Pagination
status __	Status

HeaderAuth

Name	Schema
gobiiCropType __	string
password __	string
token __	string
userName __	string

HeaderStatusMessage

Name	Schema
gobiiStatusLevel __	enum (ERROR, VALIDATION, WARNING, INFO, OK)
gobiiValidationStatusType __	enum (NONE, UNKNOWN, VALIDATION_COMPOUND_UNIQUE, VALIDATION_NOT_UNIQUE, NONEXISTENT_FK_ENTITY, BAD_REQUEST, MISSING_REQUIRED_VALUE, ENTITY_DOES_NOT_EXIST, ENTITY_ALREADY_EXISTS, UNKNOWN_ENUM_VALUE, RESOURCE_LIMIT)
message __	string

Link

Name	Schema
description __	string
href __	string
methods __	< enum (GET, POST, PUT, PATCH, DELETE, OPTIONS) > array

LinkCollection

Name	Schema
exploreLinksPerDataItem __	< < Link > array > array
linksPerDataItem __	< Link > array

Pagination

Name	Schema
currentPage __	integer (int32)
pageSize __	integer (int32)
pagedQueryId __	string
queryTime __	string (date-time)
totalPages __	integer (int32)

PayloadAnalysisDTO

Name	Schema
data __	< AnalysisDTO > array
linkCollection __	LinkCollection

PayloadConfigSettingsDTO

Name	Schema
data —	< ConfigSettingsDTO > array
linkCollection —	LinkCollection

PayloadEnvelopeAnalysisDTO

Name	Schema
header —	Header
payload —	PayloadAnalysisDTO

PayloadEnvelopeConfigSettingsDTO

Name	Schema
header —	Header
payload —	PayloadConfigSettingsDTO

PayloadEnvelopeRestProfileDTO

Name	Schema
header —	Header
payload —	PayloadRestProfileDTO

PayloadRestProfileDTO

Name	Schema
data —	< RestProfileDTO > array
linkCollection —	LinkCollection

RestProfileDTO

Name	Schema
allowedProcessTypes __	< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
id __	integer (int32)
max __	integer (int32)
restMethodType __	enum (GET, POST, PUT, PATCH, DELETE, OPTIONS)
restResourceId __	enum (GOBII_AUTH, GOBII_PING, GOBII_PROJECTS, GOBII_NAME_ID_LIST_DEPRECATED, GOBII_NAMES, GOBII_FILE_LOAD, GOBII_FILE_LOAD_INSTRUCTIONS, GOBII_FILE_EXTRACTOR_INSTRUCTIONS, GOBII_FILE_EXTRACTOR_JOBS, GOBII_FILE_LOADER_JOBS, GOBII_DISPLAY, GOBII_CV, GOBII_CVGROUP, GOBII_CONTACTS, GOBII_CONTACT_SEARCH, GOBII_ORGANIZATION_SEARCH, GOBII_REFERENCE, GOBII_EXPERIMENTS, GOBII_DATASETS, GOBII_DATASETTYPES, GOBII_ANALYSIS, GOBII_MARKERGROUP, GOBII_MANIFEST, GOBII_ORGANIZATION, GOBII_PLATFORM, GOBII_MAPSET, GOBII_CONFIGSETTINGS, GOBII_ROLES, GOBII_MARKERS, GOBII_MARKER_SEARCH, GOBII_CALLS, GOBII_GERMPLASM, GOBII_OBSERVATION_VARIABLES, GOBII_PROTOCOL, GOBII_VENDORS, GOBII_FILES, GOBII_JOB, GOBII_ENTITIES, GOBII_COUNT, GOBII_LAST_MODIFIED, GOBII_VERTICES, GOBII_VALUES, GOBII_REST_PROFILES, GOBII_DNASAMPLES, GOBII_DNARUN, GOBII_LINKAGEGROUP, GOBII_JOB_DNASAMPLE, BRAPI_ALLELE_MATRIX_SEARCH, BRAPI_ALLELE_MATRIX_SEARCH_STATUS, BRAPI_ALLELE_MATRICES, KDC_START, KDC_STATUS, KDC_DOWNLOAD, KDC_PURGE, BRAPI_LOGIN, BRAPI_STUDIES_SEARCH, BRAPI_STUDIES, BRAPI_CALLS)
templateParameter __	string

ServerConfigItem

Name	Schema
confidentialityNotice __	string
contextRoot __	string

Name	Schema
domain __	string
fileLocations __	< string, string > map
gobiiCropType __	string
port __	integer (int32)

Status

Name	Description	Schema
statusMessages __		< HeaderStatusMessage > array
statusMessagesByCode __		< string, string > map
succeeded __	**Default** : `false`	boolean