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= GOBii API

Table of Contents

Overview.....	1
Version information	1
License information	1
URI scheme	1
Overview.....	1
Language and Framework.....	1
The DTO Payload	2
Request/Response Structure	2
Authentication	4
Error Handling	4
Paths	5
/analyses.....	5
/analyses.....	5
/auth.....	6
/configsettings.....	6
/restprofiles	7
Definitions	7
AnalysisDTO	7
ConfigSettingsDTO	8
EntityPropertyDTO	9
Header	9
HeaderAuth	9
HeaderStatusMessage	10
Link	10
LinkCollection.....	10
Pagination	11
PayloadAnalysisDTO	11
PayloadConfigSettingsDTO	11
PayloadEnvelopeAnalysisDTO	11
PayloadEnvelopeConfigSettingsDTO	11
PayloadEnvelopeRestProfileDTO	11
PayloadRestProfileDTO	12
RestProfileDTO	12
ServerConfigItem.....	14
Status.....	14

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>

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 framework. 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;
}
```

The request and response are almost always wrapped in a type-parameterized `PayloadEnvelope`. 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 entities).

For a client of this application, however, the strongly-typed nature of the implementation is irrelevant: 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 call. From the reference section for each web method in this document, you can 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	Description	Schema	Default
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

/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	Description	Schema	Default
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 configuration document

Parameters

Type	Name	Description	Schema	Default
Body	body		PayloadEnvelopeRestProfileDTO	

Responses

HTTP Code	Description	Schema
200	successful operation	PayloadEnvelopeRestProfileDTO

Definitions

AnalysisDTO

Name	Description	Schema
algorithm		string
allowedProcessTypes		< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
analysisDescription		string
analysisId		integer(int32)
analysisName		string
analysisTypeId		integer(int32)

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

ConfigSettingsDTO

Name	Description	Schema
allowedProcessesTypes		< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
id		integer(int32)

Name	Description	Schema
maxUploadSizeMbytes		integer(int32)
serverCapabilities		< string, boolean > map
serverConfigs		< string, ServerConfigItem > map

EntityPropertyDTO

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

Header

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

HeaderAuth

Name	Description	Schema
gobiiCropType		string
password		string
token		string
userName		string

HeaderStatusMessage

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

LinkCollection

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

Pagination

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

PayloadAnalysisDTO

Name	Description	Schema
data		< AnalysisDTO > array
linkCollection		LinkCollection

PayloadConfigSettingsDTO

Name	Description	Schema
data		< ConfigSettingsDTO > array
linkCollection		LinkCollection

PayloadEnvelopeAnalysisDTO

Name	Description	Schema
header		Header
payload		PayloadAnalysisDTO

PayloadEnvelopeConfigSettingsDTO

Name	Description	Schema
header		Header
payload		PayloadConfigSettingsDTO

PayloadEnvelopeRestProfileDTO

Name	Description	Schema
header		Header

Name	Description	Schema
payload		PayloadRestProfileDTO

PayloadRestProfileDTO

Name	Description	Schema
data		< RestProfileDTO > array
linkCollection		LinkCollection

RestProfileDTO

Name	Description	Schema
allowedProcessesTypes		< enum (CREATE, READ, UPDATE, DELETE, NONE) > array
id		integer(int32)
max		integer(int32)
restMethodType		enum (GET, POST, PUT, PATCH, DELETE, OPTIONS)

Name	Description	Schema
restResourceI d		enum (GOBII_AUTH, GOBII_PING, GOBII_PROJECTS, GOBII_NAME_ID_LIS T_DEPRECATED, GOBII_NAMES, GOBII_FILE_LOAD, GOBII_FILE_LOAD_I NSTRUCTIONS, GOBII_FILE_EXTRAC TOR_INSTRUCTIONS, GOBII_FILE_EXTRAC TOR_JOBS, GOBII_FILE_LOADER _JOBS, GOBII_DISPLAY, GOBII_CV, GOBII_CVGROUP, GOBII_CONTACTS, GOBII_CONTACT_SE ARCH, GOBII_ORGANIZATI ON_SEARCH, GOBII_REFERENCE, GOBII_EXPERIMENT S, GOBII_DATASETS, GOBII_DATASETtyp ES, GOBII_ANALYSIS, GOBII_MARKERGRO UP, GOBII_MANIFEST, GOBII_ORGANIZATI ON, GOBII_PLATFORM, GOBII_MAPSET, GOBII_CONFIGSETTI NGS, GOBII_ROLES, GOBII_MARKERS, GOBII_MARKER_SEA RCH, GOBII_CALLS, GOBII_GERMPLASM, GOBII_OBSERVATIO N_VARIABLES, GOBII_PROTOCOL, GOBII_VENDORS, GOBII_FILES, GOBII_JOB, GOBII_ENTITIES, GOBII_COUNT, GOBII_LAST_MODIFI ED, GOBII_VERTICES, GOBII_VALUES,

Name	Description	Schema
templateParameter		string

ServerConfigItem

Name	Description	Schema
confidentialityNotice		string
contextRoot		string
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