## **GRID API v2**

## **API Endpoint Reference**

## **Get Point Cloud or Raster Features**

Get a list of point cloud and/or raster features via GRiD's Web Feature Service (WFS).

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/cgi-bin/gridws
```

## Request Parameters

This is not an exhaustive list of parameters for the WFS endpoint, but represents a common use case - querying for point cloud and/or raster features by bounding box. Please refer to the WFS specification or any number of Internet tutorials for more complex use cases.

Query parameter	Value
service	Required. wfs
version	Required. 1.1.0
request	Required. getfeature
typename	Optional. ms:gridws_pointcloud and/orms:gridws_raster
bbox	Optional. minx,miny,maxx,maxy

## Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains the WFS response in XML format.

## Example

 $\verb|curl -u| & \verb|curl -u| & \verb|c$ 

```
cYmal version=1.0' encoding='UTF-8' ?>
cyfalFeatureCollection
xulnatureIntpl//mapserver.gis.um.edu/mapserver*
xulnatureIn
```

## Get a User's AOI List

Get a list of the AOIs created by or shared with the current GRiD user.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi
```

## Request Parameters

Query parameter	Value
source	Required. Your GRiD generated API key.
geom	Optional. A WKT geometry used to filter AOI results.

### Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains an array of AOI object in JSON format.

### Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/aoi/?geom=POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))&source=grid
```

## **Get AOI Details**

Get information for a single AOI.

### **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/{pk}
```

Path parameter	Value
i atti paramotoi	Value

pk	Required. The primary key for the AOI.
Query parameter	Value
source	Required. Your GRiD generated API key.

On success, the HTTP status code in the header response is 200 OK and the response body contains an AOI Detail object in JSON format.

## Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/aoi/123/?source=grid
```

```
"API Version": "v2",
"aoi":
{
    "clip_geometry": "SRID=4326;POLYGON ((68.9150709532930961 33.5950250284996983, 68.8704389952918063 33.5955969812235011,
    "clip_geometry": "SRID=4326;POLYGON ((68.9150709532930961 33.5950250284996983, 68.8704389952918063 33.5955969812235011,
   68.9274305724316037 33.5589843621810999, 68.9274305724316037 33.5984530719840984, 68.9150709532930961 33.5950250284996983))",
   "created_at": "2013-04-16T13:10:33.974",
"is_active": true,
   "name": "First_Aoi",
"notes": "",
"source": "api",
"user": 102,
   "pk": 123
},
"export_set": [
             "datatype": "LAS 1.2",
"hsrs": "32642",
"name": "First_Aoi-UTMzone42N_2015-Oct-15.zip",
             "pk": 1335,

"started_at": "2015-10-15T18:06:13.272161",

"status": "SUCCESS",
              "url": "http://127.0.0.1:8000/export/download/1335/"
             "datatype": "DSM",
"hsrs": "32642",
"name": "First_Aoi_WGS84-UTMzone42N_2015-Oct-15.zip",
"pk": 1328,
"started_at": "2015-10-15T17:59:05.937854",
"status": "SUCCESS",
"status": "SUCCESS",
              "url": "http://127.0.0.1:8000/export/download/1328/"
      },
 "pointcloud intersects": [
              "datatype": "LAS 1.2",
"name": "20110323_00_0_UFO",
"pk": 168
             "datatype": "DSM",
"name": "20080407_00_0_UFO",
"pk": 228
```

## Add AOI

Create a new AOI for the given geometry.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/add
```

Query parameter	Value
source	Required. Your GRiD generated API key.
name	Required. The name for the AOI.
geom	Required. A WKT geometry describing the AOI.
subscribe	Optional. True, False, T, F, 1, 0. Default: false

On success, the HTTP status code in the header response is 200 OK and the response body contains an AOI Detail object in JSON format.

#### Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/aoi/add/?source=grid&name=test&geom=POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))&subscribe=True
```

## **Edit AOI**

Update an AOIs name, notes, or geometry. In order to change an AOI's geometry, it must contain 0 generated exports.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/edit/<pk>
```

Path parameter	Value
pk	The primary key of the AOI.

Query parameter	Value
source	Required. Your GRiD generated API key.
name	Optional. The name for the AOI.
geom	Optional. A WKT geometry describing the AOI.
notes	Optional. The notes for the AOI.

On success, the HTTP status code in the header response is 200 OK and the response body contains an AOI Detail object in JSON format.

## Example

```
\verb|curl -u | < username> | \verb|http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/aoi/edit/123/?source=grid&name=new | name&notes=updated | notes |
```

## **Delete AOI**

Delete an existing AOI.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/delete/<pk>
```

## Request Parameters

Path parameter	Value
pk	The primary key of the AOI.

Query parameter	Value
source	Required. Your GRiD generated API key.

## Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains a the status in JSON format.

#### Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/aoi/delete/123/?source=grid
```

```
{
    "API Version": "v2",
    "success": true
}
```

## **Get Export Details**

Get information for a single export.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/export/{pk}
```

#### Request Parameters

Path parameter	Value
pk	Required. The primary key for the export.
Query parameter	Value

Required. Your GRiD generated API key.

## Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains an Export Detail object in JSON format.

## Example

source

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/export/1335/?source=grid
```

```
"export":
{
 "status": "SUCCESS",
 "pcl_terrain": "",
  "dim_classification": true,
 "file_export_options": "individual",
  "name": "",
  "classification": "",
  "datatype": "LAS 1.2",
  "notes": "",
  "rgb": false,
  "hsrs": "32641",
  "url": "http://localhost:8000/export/download/2880/",
  "intensity": true,
  "pk": 2880,
  "generate_dem": false,
  "started_at": "2016-05-16T16:18:12.752305",
  "sri_hres": null
"API Version": "v2",
"exportfiles": [
    "url": "http://gridte.rsgis.erdc.dren.mil/te_ba/export/download/file/30359/",
    "pk": 30359,
    "name": "ExportedFile.laz"
 }
],
```

```
"tda_set": [
    {
      "status": "SUCCESS",
      "tda_type": "Los",
      "name": "LineOfSightResult",
      "url": "http://gridte.rsgis.erdc.dren.mil/te_ba/tda/download/1069/",
      "created_at": "2015-05-12T18:25:05.082077",
      "pk": 1069,
      "notes": ""
    }, {
      "status": "SUCCESS",
      "tda_type": "Hlz",
      "name": "HelicopterLandingZoneResult",
      "url": "http://gridte.rsgis.erdc.dren.mil/te_ba/tda/download/1068/",
      "created_at": "2015-05-12T18:24:20.701910",
      "pk": 1068,
      "notes": ""
    }
  1
}
```

## **Edit Export**

Update an Exports name or notes.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/export/edit/<pk>
```

## Request Parameters

Path parameter	Value
pk	The primary key of the export.

Query parameter	Value
source	Required. Your GRiD generated API key.
name	Optional. The name for the export.
notes	Optional. User notes.

### Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains an Export Detail object in JSON format.

## Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/export/edit/1335/?source=grid&name=new name&notes=notes
```

```
{
    "export":
    {
```

```
"status": "SUCCESS",
      "pcl_terrain": "",
      "dim_classification": true,
      "file_export_options": "individual",
      "name": "new name",
      "classification": "",
      "datatype": "LAS 1.2",
      "notes": "notes",
      "rgb": false,
      "hsrs": "32641",
      "url": "http://localhost:8000/export/download/1335/",
      "intensity": true,
      "pk": 1335,
      "generate_dem": false,
      "started_at": "2016-05-16T16:18:12.752305",
      "sri_hres": null
    },
    "exportfiles": [
      "url": "http://gridte.rsgis.erdc.dren.mil/te_ba/export/download/file/30359/",
      "pk": 30359,
      "name": "ExportedFile.laz"
    ],
    "tda_set": [],
    "API Version": "v2",
    "success": true
}
```

## **Delete Export**

Delete an existing Export.

### **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/export/delete/<pk>
```

### Request Parameters

Path parameter	Value
pk	The primary key of the export.

Query parameter	Value
source	Required. Your GRiD generated API key.

#### Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains a the status in JSON format.

### Example

curl -u <username> http://gridte.rsgis.erdc.dren.mil/te\_ba/api/v2/export/delete/1335/?source=grid

```
{
    "API Version": "v2",
    "success": true
}
```

## **Lookup Geoname**

Get suggested AOI name based on geographic coordinates of the geometry.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/geoname
```

## Request Parameters

Query parameter	Value	
source	Required. Your GRiD generated API key.	
geom	Required. A WKT geometry describing the AOI.	

### Response Format

On success, the HTTP status code in the header response is 200 OK and the response body contains a Geoname object in JSON format.

## Example

```
curl -u <username> http://gridte.rsgis.erdc.dren.mil/te_ba/api/v2/geoname/?geom=POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))&source=grid
```

```
{
    "API Version": "v2",
    "name": "Great Sand Sea",
    "provided_geometry": "POLYGON ((30 10, 40 40, 20 40, 10 20, 30 10))"
}
```

## **Get Task Details**

Get task status/details for the provided task\_id.

### **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/task/{task_id}
```

Path parameter	Value
task_id	Required. The ID of the task.

Query parameter	Value
source	Required. Your GRiD generated API key.

On success, the HTTP status code in the header response is 200 OK and the response body contains an Task object in JSON format.

## Example

```
{
   "API Version": "v2",
   "task_traceback": "",
   "task_state": "SUCCESS",
   "task_tstamp": "2015-09-09T14:19:36.080",
   "task_name": "export.tasks.generate_export",
   "task_id": "774b4666-5706-4237-8661-df0f96cd7b9c"
}
```

## **Generate Point Cloud Export**

Generate point cloud export for the given AOI primary key and collect primary keys.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/{pk}/generate/pointcloud
```

Path parameter	Value
pk	The primary key of the AOI.

Query parameter	Value	
source	Required. Your GRiD generated API key.	
products	Required. A list of product primary keys to include in the export, separated by + or ,.	
name	Optional. An optional name for the export.	
intensity	Optional. Whether or not to export intensity. Default: True.	
dim_classificat ion	Optional. Whether or not to export classification. Default: True.	
hsrs	Optional. Accepts an EPSG code. Defaults to AOI SRS.	
file_export_op tions	Optional. Determine file merging strategy. Accepts individual and collect. Default: individual.	
export_file_ty pe	Optional. Determine the The format of the output file. Accepts las12, las14, nitf, pdf, and bpf3. Default: las12.	
compressed	Optional. Whether or not to export compressed data. Default: True.	
send_email	Optional. Whether or not to notify user via email upon completion. Default: False.	
generate_dem	Optional. Whether or not to generate a DEM from the pointcloud. Default: False.	

cell_spacing	Optional. Used together with generate_dem. Default: 1.0.	
pcl_terrain	Optional. Used to trigger a PMF Bare Earth export. Accepts ubran, suburban, mountainous, and foliated. Default: None. Cannot be used with sri_hres option.	
sri_hres	Optional. Used to trigger a Sarnoff Bare Earth export. Accepts the horizontal resolution. Default: None. Cannot be used with pcl_terrain option.	

On success, the HTTP status code in the header response is 200 OK and the response body contains a Generate export object in JSON format.

## Example

 $\verb|curl -u | < username> | \verb|http://gridte.rsgis.erdc.dren.mil/api/v2/aoi/2389/generate/pointcloud/?products=100+102&source=grideric | \verb|gridte.rsgis.erdc.dren.mil/api/v2/aoi/2389/generate/pointcloud/?products=100+102&source=grideric | \verb|gridte.rsgis.erdc.dren.mil/api/v2/aoi/2389/generate/pointcloud/?products=100+100&source=grideric | \verb|gridte.rsgis.erdc.dren.mil/api/v2/aoi/2389/generate/pointcloud/?products=100+100&source=grideric | \verb|gridte.rsgis.erdc.dren.grideric | \verb|gridte.rsgis.erdc.dren.grid$ 

```
{
   "API Version": "v2",
   "started" : true,
   "task_id" : "774b4666-5706-4237-8661-df0f96cd7b9c"
}
```

## **Generate Raster Export**

Generate point cloud export for the given AOI primary key and collect primary keys.

## **Endpoint**

```
GET <instance_url>/<instance_root>_ba/api/v2/aoi/{pk}/generate/raster
```

Path parameter	Value
pk	The primary key of the AOI.

Query parameter	Value
source	Required. Your GRiD generated API key.
products	Required. A list of product primary keys to include in the export, separated by + or , .
name	Optional. An optional name for the export.
hsrs	Optional. Accepts an EPSG code. Defaults to AOI SRS.
file_export_op tions	Optional. Determine file merging strategy. Accepts individual and collect. Default individual
file_format_op tions	Optional. Determine the The format of the output file. Accepts GTiff and NITF. Default: GTiff
compressed	Optional. Whether or not to export compressed data. Default: True.
send_email	Optional. Whether or not to notify user via email upon completion. Default: False.

On success, the HTTP status code in the header response is 200 OK and the response body contains a Generate export object in JSON format.

## Example

```
{
   "API Version": "v2",
   "started" : true,
   "task_id" : "774b4666-5706-4237-8661-df0f96cd7b9c"
}
```

## **Object Model**

## **AOI List object**

Key	Value Type	Value Description	
name	string	The name of the AOI.	
created_at	timestamp	The date of AOI creation. ISO 8601 format as UTC.	
is_active	boolean	Whether or not the AOI is active.	
source	string	Source of the AOI (e.g., map, api).	
user	integer	The name of the creating user.	
clip_geometry	string	The WKT geometry of the AOI.	
notes	string	User notes.	
pk	integer	The primary key of the AOI.	

## **AOI Detail object**

Key	Value Type	Value Description
clip_geomet ry	string	The WKT geometry of the AOI.
created_at	timestamp	The date of AOI creation. ISO 8601 format as UTC.
is_active	boolean	Whether or not the AOI is active.
name	string	The name of the AOI.
notes	string	User notes.
source	string	Source of the AOI (e.g., map, api).
user	integer	The id of the creating user.
pk	integer	The primary key of the AOI.
export_set	array of exports objects	The exports of the AOI.
pointcloud_ intersects	array of pointcloud product objects	The pointcloud products for the AOI.

raster_inte	array of raster product objects	The raster products for the AOI.
rsects		

# **Pointcloud Product object**

Key	Value Type	Value Description
datatype	string	The datatype (e.g., LAS 1.2, DTM).
name	string	The name of the product.
pk	integer	The primary key of the product.
sensor	string	The sensor used to make the collection.
collect_at	timestamp	The date of collection. ISO 8601 format as UTC.
classification	string	The security classification.
geometry	string	The WKT geometry of the product.
area	float	The area of the geometry in sq_km.
coverage_ratio	string	The percent of the product area covered by the AOI.
filesize	integer	The size of the product on the filesystem in bytes.
point_count	integer	The total number of points in the product.
density	float	The average point density of the product.

## **Raster Product object**

Key	Value Type	Value Description
datatype	string	The datatype (e.g., LAS 1.2, DTM).
name	string	The name of the product.
pk	integer	The primary key of the product.
sensor	string	The sensor used to make the collection.
collect_at	timestamp	The date of collection. ISO 8601 format as UTC.
classification	string	The security classification.
geometry	string	The WKT geometry of the product.
area	float	The area of the geometry in sq_km.
coverage_ratio	string	The percent of the product area covered by the AOI.
filesize	integer	The size of the product on the filesystem in bytes.

# **Export object**

Key	Value Type	Value Description
datatype	string	The datatype (e.g., LAS 1.2, DTM).
user	integer	The id of the creating user.
hsrs	string	The Horizontal Spatial Reference System EPSG code.
name	string	The name of the export.

pk	integer	The primary key of the export.
started_at	timestamp	Time of creation for the AOI. ISO 8601 format as UTC.
status	string	The status of the export (e.g., SUCCESS, FAILED, QUEUED).
url	string	The download URL of the export.

# **Export Detail object (pointcloud)**

Key	Value Type	Value Description
datatype	string	The datatype (e.g., LAS 1.2, DTM).
user	integer	The id of the creating user.
hsrs	string	The Horizontal Spatial Reference System EPSG code.
name	string	The name of the export.
pk	integer	The primary key of the export.
started_at	timestamp	Time of creation for the AOI. ISO 8601 format as UTC.
status	string	The status of the export (e.g., SUCCESS, FAILED, QUEUED).
url	string	The download URL of the export.
rgb	boolean	Whether or not RGB dimension is included in exported data.
intensity	boolean	Whether or not Intensity dimension is included in exported data.
dim_classif ication	boolean	Whether or not Classification dimension is included in exported data.
file_export _options	string	The file export option used (e.g., individual, collect, super).
generate_de m	boolean	Whether or not this was a generated DEM from pointcloud.
cell_spacin g	float	The cell spacing used in DEM generation, if applicable.
notes	string	User notes.
classificati on	string	The classifications selected for the export.
pcl_terrain	string	The PCL terrain option of the export.
sri_hres	decimal	The sri_hres value of the export.
exportfiles	array of Exportfile objects	The export files of the export.
tda_set	array of TDA objects	The TDA set of the export.
task_id	string	The ID of the associated task used for generation.

# **Export Detail object (raster)**

Key	Value Type	Value Description	
datatype	string	The datatype (e.g., LAS 1.2, DTM).	
user	integer	The id of the creating user.	
hsrs	string	The Horizontal Spatial Reference System EPSG code.	
name	string	The name of the export.	
pk	integer	The primary key of the export.	
started_at	timestamp	Time of creation for the AOI. ISO 8601 format as UTC.	
status	string	The status of the export (e.g., SUCCESS, FAILED, QUEUED).	
url	string	The download URL of the export.	
file_export _options	string	The file export option used (e.g., individual, collect, super).	
file_format _options	string	The format of the output file (e.g., GTiff, NITF).	
notes	string	User notes.	
exportfiles array of Exportfile objects		The export files of the export.	
tda_set	array of TDA objects	The TDA set of the export.	
task_id	string	The ID of the associated task used for generation.	

# **Exportfile object**

Key	Value Type	Value Description
name	string	The name of the export file.
pk	integer	The primary key of the export file.
url	string	The download URL of the export file.

# Task object

Key	Value Type	Value Description
task_traceback	string	The description of any failures if they occurred.
task_state	string	The state of the task (e.g., SUCCESS, FAILED, QUEUED).
task_tstamp	timestamp	ISO 8601 format as UTC.
task_name	string	The name of the task (e.g., export.tasks.generate_export).
task_id	string	The id of the task.

# TDA object

Key	Value Type	Value Description
created_at	timestamp	Time of creation for the TDA. ISO 8601 format as UTC.

name	string	The name of the TDA.
notes	string	User notes.
pk	integer	The primary key of the TDA.
status	string	The status of the export (e.g., SUCCESS, FAILED, QUEUED).
tda_type	string	The TDA type (e.g., HIz, Los).
url	string	The download URL of the TDA.