

Stack Takeoff and Estimating Api

Overview

The STACK API allows authorized partners authorization to create projects, upload files to projects, give users access to projects and files, and add events to users' calendars.

In order to perform any testing, by following the test links below, you will need to create a test user here [Create a User](#) if you have not already done so. Be sure to remain logged into the application.

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API Changes

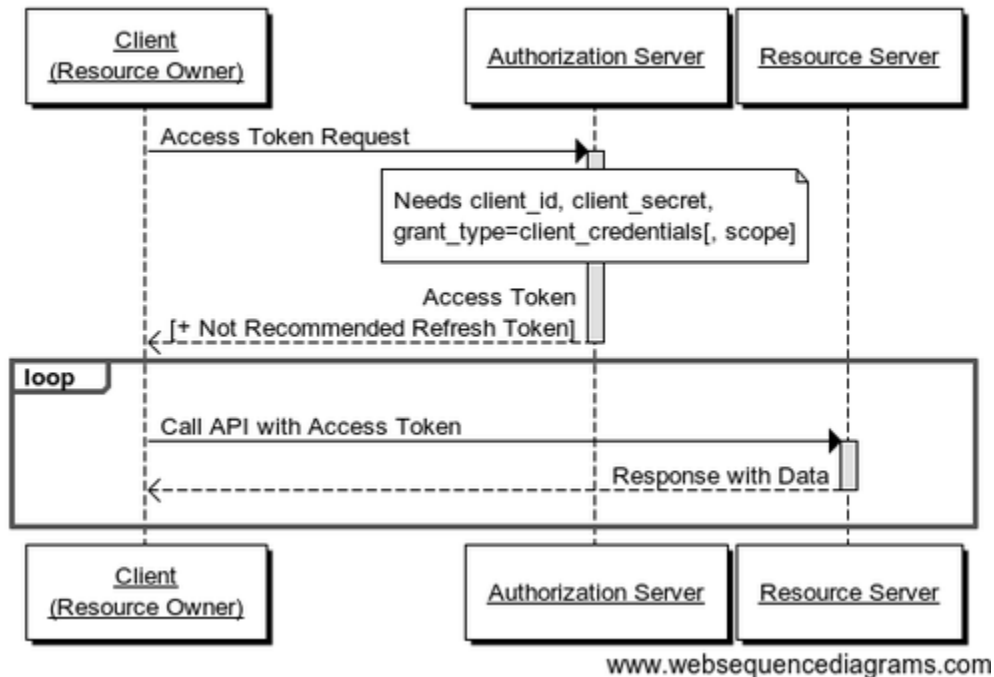
| Version | Change Date | Change |
|----------|-------------|-----------------|
| 4.16.100 | | Initial version |

| | | |
|---------|------------|---|
| 5.0.0 | 2019/01/02 | Update internal Identity Provider requiring changes to public interface to conform to OAuth 2.0 spec. <ul style="list-style-type: none"> • token_type value casing: bearer becomes Bearer. • Mandate Content-Type of "application/x-www-form-urlencoded" in OAuth/Authenticate and OAuth/Token POST requests. • The OAuth/Token response now includes a "scope" property with the value "offline_access" indicating the type or access token returned. <ul style="list-style-type: none"> • Authentication code is longer. Originally 64 alphanumeric but now follows the same spec as the access token. • Refresh token is longer. Originally 64 alphanumeric but now follows the same spec as the access token. |
| 5.0.220 | 2019/02/07 | Remove deprecated API's to "Events" route in preference to "Event" |
| 5.0.280 | 2019/02/15 | Remove unused API endpoints Takeoffs/{takeoffId}/Events Projects/{projectId}/Events |

OAuth 2.0 - Two-Legged Authorization

The first step in integrating with the STACK API is understanding the API's authorization process. Any time a Partner makes a request to the STACK API, whether on behalf of the Partner or on behalf of a User affiliated with a Partner, they must be authorized through STACK's Authorization Server.

Client Credentials Grant Flow



Obtaining Client Credentials

STACK will provide a Partner with their own clientId and client secret. The clientId and client secret are combined, separated by a colon and base64 encoded as follows:

1. Combine the clientId and client secret: ex. "5:11728663-C8DD-4B84-9B2B-4E3916631A54"
2. Ensure that the "clientId:client-secret" are **Base64 Encoded**.

Add the encoded client credentials to the Authorization Header of the request:

```

Authorization: Basic
NToxMTcyODY2My1DOERELTRCODQtOUiYQi00RTM5MTY2MzFBNTQ=
  
```

Obtaining an Access Token on Behalf of the Partner

To obtain an `access_token`, a Partner must make a POST request to this endpoint, "<https://c3.ct-test.net/OAuth/Token>" and include the Client Credentials in the Authorization Header of the request. A Grant Type is also required in the body of the request; "`grant_type=client_credentials`".

Request:

```
POST https://c3.ct-test.net/OAuth/Token
Authorization: Basic
VEhJUyYBJUyBCQVNFNjQGU1RSSU5HIE9GIFlPVVIGUEFSVE5FUklEfbFBBU1RORVIGU0VDUkVU
Cg==
Content-Type: application/x-www-form-urlencoded

grant_type=client_credentials
```

Note there must be no line endings after the form data, if an invalid `grant_type` will be returned. This includes carriage returns (0x0d) and or new lines characters (0x0a).

Response:

```
{
  "access_token":
  "tG05IRnPA3hBINzKmIU28zR60xqoachJzI5av5RMTECRE8uNzeYt95w9XOmNon-4lF3KXQj
gakNfMT9nHgtRxItobmdkZ4xi849LlMhS6SKyCQvHI....",
  "token_type": "Bearer",
  "expires_in": 28799,
  "refresh_token":
  "898c0a5d1a5c42a9898caf23de67467847db7c42e53f4aa8b599eadc495c55e4"
}
```

Note the `access_token` in the response. The `access_token` will be used in the Bearer Authorization Header of any future requests to the API. `access_tokens` will expire as shown in the `expires_in` field of the response and will need to be refreshed using the `refresh_token`.

Authenticating Requests to the API

Below is a sample POST to create a Project using STACK's API:

Request Headers:

```
POST https://api.ct-test.net/api/v1/Projects HTTP/1.1
Authorization: Bearer
4M43RLMJ_aokPXQ5TRMTXtpQGAujV_ABheRbBhdg_e_XKerlk1zmqEzPrfaFCLen...(acce
ss_token)
...
```

See below for request and response body formats.

Refreshing Access Tokens

As mentioned above, `access_tokens` will need to be refreshed. The process is similar to initially obtaining an `access_token`. Use your Client

Credentials in the Authorization header and format your refresh_token as shown in the example below.

Request Header:

```
POST https://c3.ct-test.net/OAuth/Token HTTP/1.1
Authorization: Basic (your Client Credentials)
Content-Type: application/x-www-form-urlencoded

refresh_token=d826c4204c847bf9fcbf41a63a16d271adea23e...&grant_type=refresh_token
```

Note there must be no line endings after the form data, if an invalid grant_type will be returned. This includes carriage returns (0x0d) and or new lines characters (0x0a).

Response:

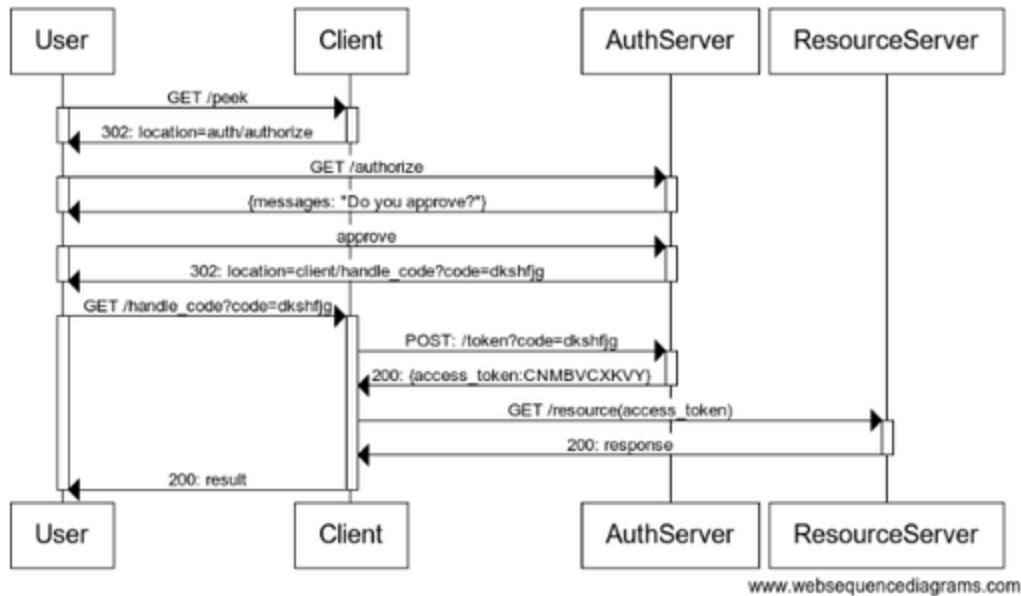
```
{
  "access_token": "qKDgDm1Yza1Rp6VSYwJ5M7LPX-Do3aPCsaIrRzJ1_wsVt_6Whm2dMAk
eMYTs1S5uQe.....",
  "token_type": "Bearer",
  "expires_in": 28799,
  "refresh_token": "b368fd873df3406cb5b35482f68eb1597111ed851cf243df9edeb5
e7e52ee4dc"
}
```

OAuth 2.0 - Three-legged Authorization

Obtaining Authentication on Behalf of the User

The following will describe how to authorize accessing the API on behalf of a User. The idea is that one of your customers is interacting with your product and you wish to transfer them to Stack. You will already have an access token from the 2 legged work flow above so now you have to gain access for your user.

Sequence diagram, auth-code-flow, with an already authenticated user (steps 2-4):



First, the user must be redirected to STACK's Authorization Page. This can be accomplished by a redirect url applied to an action the User initiates such as clicking a link on the Partner's page to view a Project in the STACK Application. The redirect will contain the redirect_uri provided by the Partner and the ClientID provided by STACK:

Request:

```

https://c3.ct-test.net/OAuth/Authorize?client_id=(your
ClientId)&redirect_uri=(your redirect_uri
encoded)&state=partner-created-value&response_type=code
  
```

The ClientID is the ID that STACK provided for you for your Client Credentials.

The redirect_uri is the uri you provided to STACK and is saved in STACK's database as part of you Partner information. When sent in the query string, the uri must be encoded.

Example:

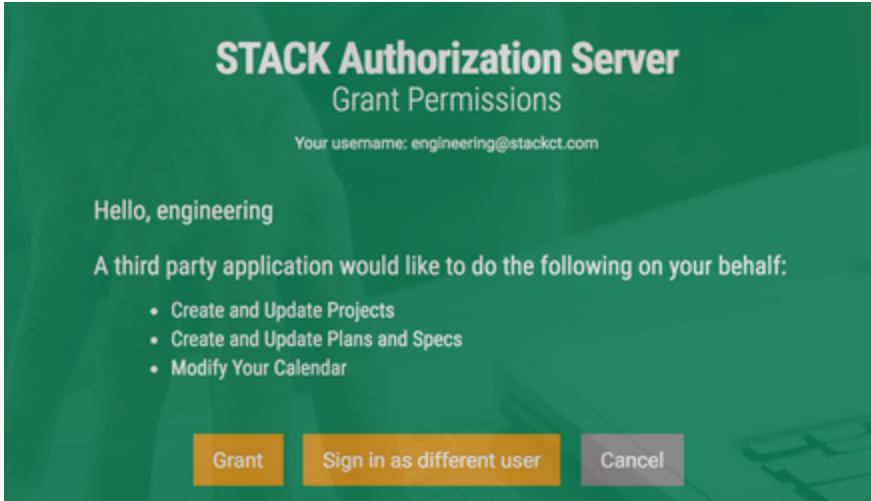
```

http%3A%2F%2Fyour%2Fredirect_uri.com
  
```

The state parameter is generated by the Partner for the Partner's use.

The response_type=code part of the query string tells the STACK Authorization Server that you are requesting a one-time-use code (GUID generated by the Authorization Server) to be used to obtain an access_token for your User.

This is an example of what the user will see:



Once the User grants the Partner access by clicking the "Grant" button, the User will be redirected to the Partner's `redirect_uri` and the one-time-use code will be attached to end of the query string. The query string returned should look like the example below:

Example:

```
http://your/redirect_uri/?code=7d07711d50c14cf0759d262878b03b37c50b0635614ee8893a166e526da90b&state=partner-created-value
```

Note the state parameter returned is the same value that was passed to us in the original request.

The code provided is a short lived intentionally and configured to expire in 5 minutes.

The request for obtaining an `access_token` for a specific User can be made from the server and requires no additional action on behalf of the User. The request for obtaining an `access_token` for the User is similar to the request for obtaining an `access_token` for a Partner.

Request:

```
POST https://c3.ct-test.net/OAuth/Token HTTP/1.1
Authorization: Basic
VEhJUyBJUyBCQVNFNjQgU1RSSU5HIE9GIFlPVVIgUEFSVE5FUklEfFBBU1RORVIgU0VDUkVU
Cg==
Content-Type: application/x-www-form-urlencoded

code=7d07711d50c14cf0759d262878b03b37c5&state=partner-created-value&re
direct_uri=(your redirect_uri)&grant_type=authorization_code
```

Note there must be no line endings after the form data, or an invalid `grant_type` will be returned. This includes carriage returns (0x0d) and or new lines characters (0x0a).

Response:

```

{
  "access_token": "dfsahjaAsdYza1Rp6VSYwJ5M7LPX-Do3aPCsaIrRzJ1_wsVt_6Whm2d
MAkeMYTs1S5uQe.....",
  "token_type": "Bearer",
  "expires_in": 28799,
  "refresh_token": "jfdkshfjdhs73df3406cb5b35482f68eb1597111ed851cf243df9e
deb5e7e52ee4dc"
}

```

Note the `access_token` in the response. The `access_token` will be used in the Bearer Authorization Header of any future requests to the API. `access_tokens` will expire as shown in the `expires_in` field of the response and will need to be refreshed using the `refresh_token`.

Token Expiry

The authorization code, access token and refresh token all expire at different times. The table below explains the settings you should manage to:

| Token Type | Expiry Time | Reason |
|--------------------|-------------|--|
| Authorization code | 5 minutes | This is a short lived value, transmitted to the partner for immediate use to retrieve an access token |
| Access token | 8 hours | An access token, for 2 legged or 3 legged authentication, represents a logged in session only, and refreshed regularly to ensure the credential status hasn't changed. |
| Refresh token | 90 days | This long period of time represents that the users granted permission is verified at a consistent frequency. |

Events

Events are items on a user's calendar associated with a project. Note: All times posted to the STACK Api must be UTC and will be treated as such.

- Accepts: json
- Return: Collection+json
- Template: Event
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Event
 - Returns a collection of the current users's events.
- GET /api/Event/{EventId}
 - Returns a collection containing the specified event by event id for the current user.
- POST /api/Event
 - Creates a new event for the current user and returns a collection containing the newly created event. Set the ID to 0 for the new event.
- PUT /api/Event/{EventId}
 - Updates the specified event for the current user and returns a collection containing the updated event.
- DELETE /api/Event/{EventId}
 - Deletes the specified event for the current user.
- Template

```

{
  "Template": {
    "Data": [
      { "Name": "EventId", "Value": {EVENT_ID}},
      { "Name": "CategoryId", "Value": {0=Event, 1=Bid Due}},
      { "Name": "StartDate", "Object": "{Start Date}" },
      { "Name": "EndDate", "Object": "{End Date}" },
      { "Name": "Subject", "Value": "{Subject}" },
      { "Name": "ImportanceId", "Value": {0=First, 1=Second}},
      { "Name": "IsAllDay", "Value": {true, false}},
      { "Name": "TimeMarkerId", "Value": {1=Busy, 2=Free, 3=Out of Office,
4=Tentative}},
      { "Name": "ProjectId", "Value": {0 or Project ID}},
      { "Name": "TakeoffId", "Value": {0 or Takeoff ID}},
      { "Name": "UserId", "Value": {User ID}},
      { "Name": "PartnerId", "Value": {Partner ID}}
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/Event/Template/"
  }
}

```

Files

A file is a plan or specification document for a project.

- Accepts: json
- Return: Collection+json
- Template: File
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Folders/{FolderId}/Files
 - Returns a collection of the files for the specified folder.
- GET /api/Files/{FileId}
 - Returns a collection containing the specified file by file id.
- GET /api/Projects/{ProjectId}/Users/{UserId}/Files
 - Returns a collection of the files the specified users has been given access to within the specified project.
- POST /api/Folders/{FolderId}/Files
 - Creates a new file in the specified folder and uploads the attached files in the multipart mime post. Returns a collection containing the newly created file.
- POST /api/Projects/{ProjectId}/Users/{UserId}/Files
 - Grants the specified user access to the file within the specified project.
- PUT /api/Files/{FileId}
 - Updates the specified file information and returns a collection containing the updated file.
- DELETE /api/Files/{FileId}
 - Deletes the specified file by file id.
- DELETE /api/Projects/{ProjectId}/Users/{UserId}/Files/{FileId}
 - Revokes access to the specified file within the specified project from the specified user.
- Template


```

{
  "Template": {
    "Data": [
      {"Name": "FileId", "Value": {File Id}},
      {"Name": "FileName", "Value": "{File Name}"},
      {"Name": "FolderId", "Value": {Folder ID}},
      {"Name": "ProjectId", "Value": {Project ID}},
      {"Name": "IsPlan", "Value": {true, false}},
      {"Name": "Rotate", "Value": {Rotate}},
      {"name": "AssignToUsers", "Value": {true, false}},
      {"name": "FileVersion", "Value": {FileVersion}}
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/Files/Template/"
  }
}

```

Upload Example

To upload a file you will need to post a form with two fields in it. The first, named 'body' contains the json describing the file, and the second, named file, contains the posted file data itself.

```

POST https://api.ct-test.net/api/v1/Folders/{int:folderId}/Files/
HTTP/1.1
Accept: application/json, text/plain, */*
Authorization: Bearer ***
Content-Type: multipart/form-data;
boundary=----WebKitFormBoundaryhBGJZvGSuQiPwHsU

-----WebKitFormBoundaryhBGJZvGSuQiPwHsU
Content-Disposition: form-data; name="body"

{
  "error": {
    "title": "",
    "code": "",
    "message": ""
  },
  "Template": {
    "data": [
      {
        "Name": "FileId",
        "Value": 0
      },
      {
        "Name": "ProjectId",

```

```
    "Value": PROJECT_ID
  },
  {
    "Name": "FileName",
    "Value": "FILE NAME.pdf"
  },
  {
    "Name": "IsPlan",
    "Value": true
  },
  {
    "Name": "FolderId",
    "Value": FOLDER_UID
  },
  {
    "Name": "Rotate",
    "Value": 0
  },
  {
    "Name": "AssignToUsers",
    "Value": true
  }
]
}
```

-----WebKitFormBoundaryhBGJZvGSuQipWHsU

Content-Disposition: form-data; name="file"; filename="FILE NAME.pdf"

Content-Type: application/pdf

%PDF-1.0

%®™"™™

1 0 obj

Folders

A folder is a way to organize files within a project.

- Accepts: json
- Return: Collection+json
- Template: Folder
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Projects/{ProjectId}/Folders
 - Returns a collection of the parent folders for the specified project.
- GET /api/Folders/{FolderId}
 - Returns a collection containing the specified folder by folder id.
- GET /api/Folders/{FolderId}/Folders
 - Returns a collection of subfolders for the specified folder.
- POST /api/Projects/{ProjectId}/Folders
 - Creates a new folder for the specified project and returns a collection containing the newly created folder. To create a subfolder, set the parent folder id to the folder under which the new folder should be created.
- PUT /api/Folders/{FolderId}
 - Updates the specified folder and returns a collection containing the updated folders.
- DELETE /api/Folders/{FolderId}
 - Deletes the specified folder by folder id.
- Template

```
{
  "Template": {
    "Data": [
      { "Name": "FolderId", "Value": {Folder ID} },
      { "Name": "FolderName", "Value": "{Folder Name}" },
      { "Name": "ProjectId", "Value": {Project ID} },
      { "Name": "ParentFolderId", "Value": {Parent Folder ID} }
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/Folders/Template/"
  }
}
```

Notifications

Notifications allow a partner to register to be notified via web request when a particular action is taken with one of his projects.

- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/CTNotifications
 - Returns a collection of the current partner's notifications.
- GET /api/CTNotifications/{NotificationTypeId}
 - Returns a collection containing the notifications of the specified type for the current partner.
- POST /api/CTNotifications

- Creates a new notification for the current partner and returns a collection containing the newly created notification. The notification url specifies where a request should be sent when the specified activity is performed.
 - PUT /api/CTNotifications
 - Updates the notification for the current partner and returns a collection containing the updated notification.
 - DELETE /api/CTNotifications/{NotificationTypeId}
 - Deletes the notification of the specified type for the current partner.
- Accepts: json
 - Return: Collection+json
 - Template

```

{
  "Template": {
    "Data": [
      { "Name": "NotificationTypeId", "Value": {1=View Page, 3=Print Page, 7=Project Deleted} },
      { "Name": "NotificationUrl", "Value": "{Notification Url}" }
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/CTNotifications/Template/"
  }
}

```

Projects

A project is a container for folders and files (created separately). Note: All times posted to the STACK Api must be UTC and will be treated as such.

- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Projects
 - Returns a collection of the current user's projects.
 - GET /api/Projects/{ProjectId}
 - Returns a collection containing the specified project by project id.
 - POST /api/Projects
 - Creates a new project for the current partner and returns a collection containing the newly created project. Set the ID to 0 for the new project.
 - PUT /api/Projects/{ProjectId}
 - Updates the project for the current partner and returns a collection containing the updated project.
 - DELETE /api/Projects/{ProjectId}
 - Deletes the specified project by project id.
- Template

```

{
  "template": {
    "data": [
      {
        "name": "ProjectId",
        "prompt": "Project Id",
        "type": "Value"
      },
      {
        "name": "Name",
        "prompt": "Project Name",

```

```
    "type": "Value"
  },
  {
    "name": "Notes",
    "prompt": "Notes",
    "type": "Value"
  },
  {
    "name": "SourceId",
    "prompt": "Source Id",
    "type": "Value"
  },
  {
    "name": "Source",
    "prompt": "Source",
    "type": "Value"
  },
  {
    "name": "BidDate",
    "prompt": "Bid Date",
    "type": "Object"
  },
  {
    "name": "ExpirationDate",
    "prompt": "Expiration Date",
    "type": "Object"
  },
  {
    "name": "DateCreated",
    "prompt": "Date Created",
    "type": "Object"
  },
  {
    "name": "AddressLine1",
    "prompt": "Address Line1",
    "type": "Value"
  },
  {
    "name": "AddressLine2",
    "prompt": "Address Line2",
    "type": "Value"
  },
  {
    "name": "City",
    "prompt": "City",
    "type": "Value"
  },
  {
    "name": "StateId",
    "prompt": "State Id",
```

```
    "type": "Value"
  },
  {
    "name": "PostalCode",
    "prompt": "Postal Code",
    "type": "Value"
  },
  {
    "name": "CountryId",
    "prompt": "Country Id",
    "type": "Value"
  },
  {
    "name": "HasPlans",
    "prompt": "Has Plans",
    "type": "Value"
  },
  {
    "name": "RemainingFlexUploads",
    "prompt": "Remaining Flex Uploads",
    "type": "Value"
  }
],
"version": "1.0",
```

```
    "href": "https://api.ct-test.net:443/api/v1/Projects/Template"
  }
}
```

Create a Project

- Accepts: json
- Return: Collection+json
- Template: Project
- Request: POST

```
https://api.ct-test.net/api/v1/Projects

{
  "template": {
    "error": {},
    "data": [
      {
        "name": "ProjectId",
        "value": PROJECT_ID
      },
      {
        "name": "Name",
        "value": "Sample Project"
      },
      {
        "name": "Notes",
        "value": null
      },
      {
        "name": "SourceId",
        "value": null
      },
      {
        "name": "Source",
        "value": null
      },
      {
        "name": "BidDate",
        "object": "2018-10-11T14:52:00.000Z"
      },
      {
        "name": "ExpirationDate",
        "object": "2019-10-11T14:52:00.000Z"
      },
      {
        "name": "DateCreated",
        "object": "2018-10-11T14:53:30.776Z"
      }
    ]
  }
}
```

```
    },
    {
      "name": "AddressLine1",
      "value": null
    },
    {
      "name": "AddressLine2",
      "value": null
    },
    {
      "name": "City",
      "value": null
    },
    {
      "name": "StateId",
      "value": null
    },
    {
      "name": "PostalCode",
      "value": null
    },
    {
      "name": "CountryId",
      "value": null
    },
    {
      "name": "HasPlans",
      "value": false
    },
    {
      "name": "RemainingFlexUploads",
      "value": 0
    }
  ]
```



```
    },
    "error": {}
  }
}
```

Give User Project Access

If you have created a project and which to distribute access to the project you will need to follow the 3 legged authentication process above and then distribute a URL to the user so they can access the project.

- Accepts: json
- Return: Collection+json
- Template: User
- Request: POST

Request:

```
https://api.ct-test.net/api/v1/Projects/PROJECT_ID/Users HTTP/1.1
```

```
{
  "template": {
    "error": {},
    "data": [
      {
        "name": "UserId",
        "value": USER_ID
      },
      {
        "name": "FirstName",
        "value": "Fred"
      },
      {
        "name": "LastName",
        "value": "Blogs"
      },
      {
        "name": "CompanyName",
        "value": "Acme Co."
      }
    ]
  }
}
```

Response

Look at the ProjectDirectLink field below for the direct link to the project.

```
{
  "collection": {
```

```
"error": {},
"links": [
  {
    "rel": "template",
    "href": "https://api.ct-test.net/api/Users/Template"
  }
],
"items": [
  {
    "data": [
      {
        "name": "UserId",
        "prompt": "User Id",
        "value": USER_ID
      },
      {
        "name": "FirstName",
        "prompt": "First Name",
        "value": "Fred"
      },
      {
        "name": "LastName",
        "prompt": "Last Name",
        "value": "Blogs"
      },
      {
        "name": "Phone",
        "prompt": "Phone",
        "value": ""
      },
      {
        "name": "StateId",
        "prompt": "State Id",
        "value": -1
      },
      {
        "name": "TradeSelections",
        "prompt": "Trade Selections",
        "array": []
      },
      {
        "name": "PostalCode",
        "prompt": "Postal Code",
        "value": ""
      },
      {
        "name": "CompanyName",
        "prompt": "Company Name",
        "value": "Acme Co."
      }
    ]
  }
],
```

```
{
  "name": "Email",
  "prompt": "Email",
  "value": ""
},
{
  "name": "CompanyId",
  "prompt": "Company Id",
  "value": 0
},
{
  "name": "Source",
  "prompt": "Source"
},
{
  "name": "NumTrials",
  "prompt": "Num Trials",
  "value": 0
},
{
  "name": "UserLevelId",
  "prompt": "User Level Id",
  "value": 0
},
{
  "name": "Track",
  "prompt": "Track",
  "value": false
},
{
  "name": "StateName",
  "prompt": "State Name"
},
{
  "name": "Subscription",
  "prompt": "Subscription"
},
{
  "name": "LastTrialStarted",
  "prompt": "Last Trial Started"
},
{
  "name": "RemoteCreatedAt",
  "prompt": "Remote Created At"
},
{
  "name": "ProjectDirectLink",
  "prompt": "Project Direct Link",
  "value":
```

"c3.ct-test.net/BuildersExchange/Index?takeoffId=TAKEOFF_ID"

```
},
{
  "name": "LockedOut",
  "prompt": "Locked Out",
  "value": false
},
{
  "name": "ArchiveDataDate",
  "prompt": "Archive Data Date"
},
{
  "name": "NumSessions",
  "prompt": "Num Sessions",
  "value": 0
},
{
  "name": "PartnerSource",
  "prompt": "Partner Source"
},
{
  "name": "SalesRepId",
  "prompt": "Sales Rep Id",
  "value": 0
},
{
  "name": "SalesRepName",
  "prompt": "Sales Rep Name"
},
{
  "name": "SupportRepId",
  "prompt": "Support Rep Id",
  "value": 0
},
{
  "name": "SupportRepName",
  "prompt": "Support Rep Name"
},
{
  "name": "IsDefaultCompanyName",
  "prompt": "Is Default Company Name",
  "value": false
},
{
  "name": "Quantity",
  "prompt": "Quantity",
  "value": 0
},
{
  "name": "Pending",
  "prompt": "Pending",
```

```
        "value": false
      }
    ],
    "links": [],
    "href": "https://api.ct-test.net/api/Users/USER_ID"
  }
],
"query": [],
"template": {
  "data": [
    {
      "name": "UserId",
      "prompt": "User Id",
      "type": "Value"
    },
    {
      "name": "FirstName",
      "prompt": "First Name",
      "type": "Value"
    },
    {
      "name": "LastName",
      "prompt": "Last Name",
      "type": "Value"
    },
    {
      "name": "Phone",
      "prompt": "Phone",
      "type": "Value"
    },
    {
      "name": "StateId",
      "prompt": "State Id",
      "type": "Value"
    },
    {
      "name": "TradeSelections",
      "prompt": "Trade Selections",
      "type": "Array"
    },
    {
      "name": "PostalCode",
      "prompt": "Postal Code",
      "type": "Value"
    },
    {
      "name": "CompanyName",
      "prompt": "Company Name",
      "type": "Value"
    }
  ],

```

```
{
  "name": "Email",
  "prompt": "Email",
  "type": "Value"
},
{
  "name": "CompanyId",
  "prompt": "Company Id",
  "type": "Value"
},
{
  "name": "Quantity",
  "prompt": "Quantity",
  "type": "Value"
}
]
},
"version": "1.0",
"href":
```

```
"https://api.ct-test.net:443/api/v1/Projects/PROJECT_ID/Users"  
  }  
}
```

Takeoff Template

Takeoff Templates are the building blocks of any takeoff. They typically represent work you will do on a project. Use descriptive names such as "Oak Wood Flooring."

- Actions:
 - POST [Stack Environment URL]/api/v1/Takeoffs/[ID]/TakeoffTemplates
 - GET[Stack Environment URL]/api/v1/Takeoffs/[Takeoff ID]/TakeoffTemplates
 - PUT [Stack Environment URL]/api/v1/TakeoffTemplates/[Takeoff Template ID]
- Template

```
{  
  "template": {  
    "data": [  
      {  
        "name": "TakeoffTemplateId",  
        "prompt": "Takeoff Template Id",  
        "type": "Value"  
      },  
      {  
        "name": "TakeoffId",  
        "prompt": "Takeoff Id",  
        "type": "Value"  
      },  
      {  
        "name": "Name",  
        "prompt": "Name",  
        "type": "Value"  
      },  
      {  
        "name": "Description",  
        "prompt": "Description",  
        "type": "Value"  
      },  
      {  
        "name": "MeasurementTypeId",  
        "prompt": "Measurement Type Id",  
        "type": "Value"  
      },  
      {  
        "name": "TakeoffTemplateFolderId",  
        "prompt": "Takeoff Template Folder Id",  
        "type": "Value"  
      },  
      {  
        "name": "LineWidth",
```

```
    "prompt": "Line Width",
    "type": "Value"
  },
  {
    "name": "LineColor",
    "prompt": "Line Color",
    "type": "Value"
  },
  {
    "name": "FillColor",
    "prompt": "Fill Color",
    "type": "Value"
  },
  {
    "name": "SymbolTypeId",
    "prompt": "Symbol Type Id",
    "type": "Value"
  },
  {
    "name": "IsHidden",
    "prompt": "Is Hidden",
    "type": "Value"
  },
  {
    "name": "LibraryTakeoffTemplateId",
    "prompt": "Library Takeoff Template Id",
    "type": "Value"
  },
  {
    "name": "HasTemplateLevelMeasurements",
    "prompt": "Has Template Level Measurements",
    "type": "Value"
  },
  {
    "name": "TakeoffQtyReportDisplayId",
    "prompt": "Takeoff Qty Report Display Id",
    "type": "Value"
  },
  {
    "name": "ExternalId",
    "prompt": "External Id",
    "type": "Value"
  },
  {
    "name": "ExternalSymbolUrl",
    "prompt": "External Symbol Url",
    "type": "Value"
  },
  {
    "name": "CategoryId",
```



```
    "prompt": "Category Id",
    "type": "Value"
  },
  {
    "name": "TemplateSortOrder",
    "prompt": "Template Sort Order",
    "type": "Value"
  }
],
"version": "1.0",
"href":
```

```
"https://api.ct-test.net/api/v1/TakeoffTemplates/Template/"
  }
}
```

Create Takeoff Template

A single takeoff template can be created.

Request

```
POST https://api.ct-test.net/api/v1/Takeoffs/[ID]/TakeoffTemplates
```

```
{
  "template": {
    "error": {},
    "data": [
      {
        "name": "TakeoffTemplateId",
        "value": 0
      },
      {
        "name": "TakeoffId",
        "value": 991684
      },
      {
        "name": "Name",
        "value": "Room 1 Floor"
      },
      {
        "name": "Description",
        "value": ""
      },
      {
        "name": "MeasurementTypeId",
        "value": 1
      },
      {
        "name": "TakeoffTemplateFolderId",
        "value": 0
      },
      {
        "name": "LineWidth",
        "value": 5
      },
      {
        "name": "LineColor",
        "value": "#059e38"
      }
    ]
  }
}
```

```
    },
    {
      "name": "FillColor",
      "value": "#07eb52"
    },
    {
      "name": "SymbolTypeId",
      "value": 2
    },
    {
      "name": "IsHidden",
      "value": false
    },
    {
      "name": "LibraryTakeoffTemplateId",
      "value": 0
    },
    {
      "name": "HasTemplateLevelMeasurements",
      "value": false
    },
    {
      "name": "TakeoffQtyReportDisplayId",
      "value": 0
    },
    {
      "name": "ExternalId",
      "value": null
    },
    {
      "name": "ExternalSymbolUrl",
      "value": null
    },
    {
      "name": "CategoryId",
      "value": null
    },
    {
      "name": "TemplateSortOrder",
      "value": 0
    }
  ]
}
```

```
},
"error": {}
}
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.ct-test.net/api/TakeoffTemplates/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "TakeoffTemplateId",
            "prompt": "Takeoff Template Id",
            "value": TAKEOFF_TEMPLATE_ID
          },
          {
            "name": "TakeoffId",
            "prompt": "Takeoff Id",
            "value": TAKEOFF_ID
          },
          {
            "name": "Name",
            "prompt": "Name",
            "value": "Room 1 Floor"
          },
          {
            "name": "Description",
            "prompt": "Description",
            "value": ""
          },
          {
            "name": "MeasurementTypeId",
            "prompt": "Measurement Type Id",
            "value": 1
          },
          {
            "name": "TakeoffTemplateFolderId",
            "prompt": "Takeoff Template Folder Id",
            "value": 0
          }
        ]
      }
    ]
  }
}
```

```
{
  "name": "LineWidth",
  "prompt": "Line Width",
  "value": 5
},
{
  "name": "LineColor",
  "prompt": "Line Color",
  "value": "#059e38"
},
{
  "name": "FillColor",
  "prompt": "Fill Color",
  "value": "#07eb52"
},
{
  "name": "SymbolTypeId",
  "prompt": "Symbol Type Id",
  "value": 2
},
{
  "name": "IsHidden",
  "prompt": "Is Hidden",
  "value": false
},
{
  "name": "LibraryTakeoffTemplateId",
  "prompt": "Library Takeoff Template Id"
},
{
  "name": "HasTemplateLevelMeasurements",
  "prompt": "Has Template Level Measurements",
  "value": false
},
{
  "name": "TakeoffTemplateMeasurements",
  "prompt": "Takeoff Template Measurements"
},
{
  "name": "TakeoffQtyReportDisplayId",
  "prompt": "Takeoff Qty Report Display Id",
  "value": 1
},
{
  "name": "ExternalId",
  "prompt": "External Id",
  "value": ""
},
{
  "name": "ExternalSymbolUrl",
```

```
    "prompt": "External Symbol Url",
    "value": ""
  },
  {
    "name": "CategoryId",
    "prompt": "Category Id"
  },
  {
    "name": "TemplateSortOrder",
    "prompt": "Template Sort Order",
    "value": 0
  },
  {
    "name": "CategorySortOrder",
    "prompt": "Category Sort Order",
    "value": 0
  },
  {
    "name": "CategoryName",
    "prompt": "Category Name",
    "value": "None"
  }
],
"links": [
  {
    "rel": "",
    "href": "https://api.ct-test.net/api/MeasurementTypes/1"
  },
  {
    "rel": "",
    "href":
"https://api.ct-test.net/api/TakeoffTemplateFolders/0"
  },
  {
    "rel": "",
    "href": "https://api.ct-test.net/api/SymbolTypes/2"
  }
],
"href":
"https://api.ct-test.net/api/TakeoffTemplates/TAKEOFF_TEMPLATE_ID"
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "TakeoffTemplateId",
      "prompt": "Takeoff Template Id",
      "type": "Value"
    }
  ],

```

```
{
  "name": "TakeoffId",
  "prompt": "Takeoff Id",
  "type": "Value"
},
{
  "name": "Name",
  "prompt": "Name",
  "type": "Value"
},
{
  "name": "Description",
  "prompt": "Description",
  "type": "Value"
},
{
  "name": "MeasurementTypeId",
  "prompt": "Measurement Type Id",
  "type": "Value"
},
{
  "name": "TakeoffTemplateFolderId",
  "prompt": "Takeoff Template Folder Id",
  "type": "Value"
},
{
  "name": "LineWidth",
  "prompt": "Line Width",
  "type": "Value"
},
{
  "name": "LineColor",
  "prompt": "Line Color",
  "type": "Value"
},
{
  "name": "FillColor",
  "prompt": "Fill Color",
  "type": "Value"
},
{
  "name": "SymbolTypeId",
  "prompt": "Symbol Type Id",
  "type": "Value"
},
{
  "name": "IsHidden",
  "prompt": "Is Hidden",
  "type": "Value"
},
},
```

```
{
  "name": "LibraryTakeoffTemplateId",
  "prompt": "Library Takeoff Template Id",
  "type": "Value"
},
{
  "name": "HasTemplateLevelMeasurements",
  "prompt": "Has Template Level Measurements",
  "type": "Value"
},
{
  "name": "TakeoffQtyReportDisplayId",
  "prompt": "Takeoff Qty Report Display Id",
  "type": "Value"
},
{
  "name": "ExternalId",
  "prompt": "External Id",
  "type": "Value"
},
{
  "name": "ExternalSymbolUrl",
  "prompt": "External Symbol Url",
  "type": "Value"
},
{
  "name": "CategoryId",
  "prompt": "Category Id",
  "type": "Value"
},
{
  "name": "TemplateSortOrder",
  "prompt": "Template Sort Order",
  "type": "Value"
}
]
},
"version": "1.0",
```



```
    "href": "https://api.ct-test.net:443/api/v1/Takeofftemplates"
  }
}
```

Get Takeoff Template

Retrieve a takeoff template with all its associated information.

Request

```
GET https://api.ct-test.net/api/v1/Takeoffs/[ID]/TakeoffTemplate
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.ct-test.net/api/TakeoffTemplates/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "TakeoffTemplateId",
            "prompt": "Takeoff Template Id",
            "value": TAKEOFF_TEMPLATE_ID
          },
          {
            "name": "TakeoffId",
            "prompt": "Takeoff Id",
            "value": TAKEOFF_ID
          },
          {
            "name": "Name",
            "prompt": "Name",
            "value": "Room 1 Floor"
          },
          {
            "name": "Description",
            "prompt": "Description",
            "value": "The living room"
          }
        ]
      }
    ]
  }
}
```

```
{
  "name": "MeasurementTypeId",
  "prompt": "Measurement Type Id",
  "value": 1
},
{
  "name": "TakeoffTemplateFolderId",
  "prompt": "Takeoff Template Folder Id",
  "value": 0
},
{
  "name": "LineWidth",
  "prompt": "Line Width",
  "value": 5
},
{
  "name": "LineColor",
  "prompt": "Line Color",
  "value": "#059e38"
},
{
  "name": "FillColor",
  "prompt": "Fill Color",
  "value": "#07eb52"
},
{
  "name": "SymbolTypeId",
  "prompt": "Symbol Type Id",
  "value": 2
},
{
  "name": "IsHidden",
  "prompt": "Is Hidden",
  "value": false
},
{
  "name": "LibraryTakeoffTemplateId",
  "prompt": "Library Takeoff Template Id"
},
{
  "name": "HasTemplateLevelMeasurements",
  "prompt": "Has Template Level Measurements",
  "value": false
},
{
  "name": "TakeoffTemplateMeasurements",
  "prompt": "Takeoff Template Measurements"
},
{
  "name": "TakeoffQtyReportDisplayId",
```

```
    "prompt": "Takeoff Qty Report Display Id",
    "value": 1
  },
  {
    "name": "ExternalId",
    "prompt": "External Id",
    "value": ""
  },
  {
    "name": "ExternalSymbolUrl",
    "prompt": "External Symbol Url",
    "value": ""
  },
  {
    "name": "CategoryId",
    "prompt": "Category Id"
  },
  {
    "name": "TemplateSortOrder",
    "prompt": "Template Sort Order",
    "value": 0
  },
  {
    "name": "CategorySortOrder",
    "prompt": "Category Sort Order",
    "value": 0
  },
  {
    "name": "CategoryName",
    "prompt": "Category Name",
    "value": "None"
  }
],
"links": [
  {
    "rel": "",
    "href": "https://api.ct-test.net/api/MeasurementTypes/1"
  },
  {
    "rel": "",
    "href":
"https://api.ct-test.net/api/TakeoffTemplateFolders/0"
  },
  {
    "rel": "",
    "href": "https://api.ct-test.net/api/SymbolTypes/2"
  }
],
"href":
"https://api.ct-test.net/api/TakeoffTemplates/TAKEOFF_TEMPLATE_ID"
```

```
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "TakeoffTemplateId",
      "prompt": "Takeoff Template Id",
      "type": "Value"
    },
    {
      "name": "TakeoffId",
      "prompt": "Takeoff Id",
      "type": "Value"
    },
    {
      "name": "Name",
      "prompt": "Name",
      "type": "Value"
    },
    {
      "name": "Description",
      "prompt": "Description",
      "type": "Value"
    },
    {
      "name": "MeasurementTypeId",
      "prompt": "Measurement Type Id",
      "type": "Value"
    },
    {
      "name": "TakeoffTemplateFolderId",
      "prompt": "Takeoff Template Folder Id",
      "type": "Value"
    },
    {
      "name": "LineWidth",
      "prompt": "Line Width",
      "type": "Value"
    },
    {
      "name": "LineColor",
      "prompt": "Line Color",
      "type": "Value"
    },
    {
      "name": "FillColor",
      "prompt": "Fill Color",
      "type": "Value"
    }
  ],
}
```

```
{
  "name": "SymbolTypeId",
  "prompt": "Symbol Type Id",
  "type": "Value"
},
{
  "name": "IsHidden",
  "prompt": "Is Hidden",
  "type": "Value"
},
{
  "name": "LibraryTakeoffTemplateId",
  "prompt": "Library Takeoff Template Id",
  "type": "Value"
},
{
  "name": "HasTemplateLevelMeasurements",
  "prompt": "Has Template Level Measurements",
  "type": "Value"
},
{
  "name": "TakeoffQtyReportDisplayId",
  "prompt": "Takeoff Qty Report Display Id",
  "type": "Value"
},
{
  "name": "ExternalId",
  "prompt": "External Id",
  "type": "Value"
},
{
  "name": "ExternalSymbolUrl",
  "prompt": "External Symbol Url",
  "type": "Value"
},
{
  "name": "CategoryId",
  "prompt": "Category Id",
  "type": "Value"
},
{
  "name": "TemplateSortOrder",
  "prompt": "Template Sort Order",
  "type": "Value"
}
]
},
"version": "1.0",
"href":
```

```
"https://api.ct-test.net:443/api/v1/Takeoffs/991684/TakeoffTemplates"  
  }  
}
```

Edit Takeoff Template

The takeoff template values can be edited.

Request

```
PUT  
https://api.ct-test.net/api/v1/TakeoffTemplates/[TAKEOFF_TEMPLATE_ID]  
  
{  
  "template": {  
    "error": {},  
    "data": [  
      {"name": "TakeoffTemplateId", "value": [TAKEOFF_TEMPLATE_ID]},  
      {"name": "TakeoffId", "value": [TAKEOFF_ID]},  
      {"name": "Name", "value": "Renamed takeoff template"},  
      {"name": "Description", "value": "Description of a renamed takeoff  
template"},  
      {"name": "MeasurementTypeId", "value": 1},  
      {"name": "TakeoffTemplateFolderId", "value": 0},  
      {"name": "LineWidth", "value": 5},  
      {"name": "LineColor", "value": "#a92ebe"},  
      {"name": "FillColor", "value": "#c862d9"},  
      {"name": "SymbolTypeId", "value": 2},  
      {"name": "IsHidden", "value": false},  
      {"name": "LibraryTakeoffTemplateId", "value": 0},  
      {"name": "HasTemplateLevelMeasurements", "value": false},  
      {"name": "TakeoffQtyReportDisplayId", "value": 0},  
      {"name": "ExternalId", "value": null},  
      {"name": "ExternalSymbolUrl", "value": null},  
      {"name": "CategoryId", "value": null},  
      {"name": "TemplateSortOrder", "value": 0},  
      {"name": "CategorySortOrder", "value": 0}]  
    }  
  }  
}
```

Response

```
{  
  "collection": {  
    "error": {},  
  }  
}
```

```

"links": [
  {
    "rel": "template",
    "href":
"https://api.ct-dev.net/api/TakeoffTemplates/Template"
  }
],
"items": [
  {
    "data": [
      {
        "name": "TakeoffTemplateId",
        "prompt": "Takeoff Template Id",
        "value": TAKEOFF_TEMPLATE_ID
      },
      {
        "name": "TakeoffId",
        "prompt": "Takeoff Id",
        "value": TAKEOFF_ID
      },
      {
        "name": "Name",
        "prompt": "Name",
        "value": "Renamed takeoff template"
      },
      {
        "name": "Description",
        "prompt": "Description",
        "value": "Description of a renamed takeoff
template"
      },
      {
        "name": "MeasurementTypeId",
        "prompt": "Measurement Type Id",
        "value": 1
      },
      {
        "name": "TakeoffTemplateFolderId",
        "prompt": "Takeoff Template Folder Id",
        "value": 0
      },
      {
        "name": "LineWidth",
        "prompt": "Line Width",
        "value": 5
      },
      {
        "name": "LineColor",
        "prompt": "Line Color",
        "value": "#a92ebe"
      }
    ]
  }
]

```

```
    },
    {
      "name": "FillColor",
      "prompt": "Fill Color",
      "value": "#c862d9"
    },
    {
      "name": "SymbolTypeId",
      "prompt": "Symbol Type Id",
      "value": 2
    },
    {
      "name": "IsHidden",
      "prompt": "Is Hidden",
      "value": false
    },
    {
      "name": "LibraryTakeoffTemplateId",
      "prompt": "Library Takeoff Template Id"
    },
    {
      "name": "HasTemplateLevelMeasurements",
      "prompt": "Has Template Level Measurements",
      "value": false
    },
    {
      "name": "TakeoffQtyReportDisplayId",
      "prompt": "Takeoff Qty Report Display Id",
      "value": 1
    },
    {
      "name": "ExternalId",
      "prompt": "External Id",
      "value": ""
    },
    {
      "name": "ExternalSymbolUrl",
      "prompt": "External Symbol Url",
      "value": ""
    },
    {
      "name": "CategoryId",
      "prompt": "Category Id"
    },
    {
      "name": "TemplateSortOrder",
      "prompt": "Template Sort Order",
      "value": 0
    },
  ],
  {
```



```
        "name": "CategorySortOrder",
        "prompt": "Category Sort Order",
        "value": 0
    },
    {
        "name": "CategoryName",
        "prompt": "Category Name",
        "value": "None"
    }
],
"links": [
    {
        "rel": "",
        "href":
"https://api.ct-dev.net/api/MeasurementTypes/1"
    },
    {
        "rel": "",
        "href":
"https://api.ct-dev.net/api/TakeoffTemplateFolders/0"
    },
    {
        "rel": "",
        "href":
"https://api.ct-dev.net/api/SymbolTypes/2"
    }
],
"href":
"https://api.ct-dev.net/api/TakeoffTemplates/TAKEOFF_TEMPLATE_ID"
}
],
"version": "1.0",
"href":
```

```
"https://api.ct-dev.net:443/api/v1/TakeoffTemplates/TAKEOFF_TEMPLATE_ID"
  }
}
```

Reports

Takeoff Reports

Collection holding each takeoff template and their associated data

- Accepts: json
- Template: ReportTakeoffSummary
- Actions:
 - GET /api/v1/Takeoffs/{id}/ReportTakeoffSummary
 - Returns a collection of takeoff templates with all its associated data.
- Template

```
{
  "Template": {
    "Data": [
      {
        "name": "TakeoffTemplateId",
        "Value": "{TakeoffTemplateId}"
      }
    ],
    "Version": "1.0",
    "Href":
    "https://api.ct-test.net/api/ReportTakeoffSummary/Template/"
  }
}
```

Request

```
GET https://api.ct-test.net/api/v1/Takeoffs/{id}/ReportTakeoffSummary
```

Response:

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href":
        "http://api.ct-test.net/api/ReportTakeoffSummary/Template"
```

```
    }
  ],
  "items": [
    {
      "data": [
        {
          "name": "TakeoffTemplateId",
          "prompt": "Takeoff Template Id",
          "value": TAKEOFF_TEMPLATE_ID
        },
        {
          "name": "Name",
          "prompt": "Name",
          "value": "Template Name"
        },
        {
          "name": "Description",
          "prompt": "Description",
          "value": "Template Description"
        },
        {
          "name": "LineWidth",
          "prompt": "Line Width",
          "value": 1
        },
        {
          "name": "LineColor",
          "prompt": "Line Color",
          "value": "#000000"
        },
        {
          "name": "FillColor",
          "prompt": "Fill Color",
          "value": "#000000"
        },
        {
          "name": "MeasurementTypeId",
          "prompt": "Measurement Type Id",
          "value": 1
        },
        {
          "name": "MeasurementName",
          "prompt": "Measurement Name",
          "value": "Area"
        },
        {
          "name": "SymbolTypeId",
          "prompt": "Symbol Type Id",
          "value": 1
        }
      ]
    }
  ]
}
```

```
{
  "name": "SymbolName",
  "prompt": "Symbol Name",
  "value": "Checkmark - Small"
},
{
  "name": "UseMetric",
  "prompt": "Use Metric",
  "value": false
},
{
  "name": "TotalGeos",
  "prompt": "Total Geos",
  "value": 1
},
{
  "name": "TotalDropCount",
  "prompt": "Total Drop Count",
  "value": 0
},
{
  "name": "TotalScaledArea",
  "prompt": "Total Scaled Area",
  "value": 278.93825
},
{
  "name": "TotalScaledLength",
  "prompt": "Total Scaled Length",
  "value": 74.0873
},
{
  "name": "TotalScaledVolume",
  "prompt": "Total Scaled Volume",
  "value": 0
},
{
  "name": "TotalVertexCount",
  "prompt": "Total Vertex Count",
  "value": 4
},
{
  "name": "TotalVolume",
  "prompt": "Total Volume",
  "value": 0
},
{
  "name": "TotalCount",
  "prompt": "Total Count",
  "value": 1
},
},
```

```
{
  "name": "Geometries",
  "prompt": "Geometries",
  "array": [
    {
      "assyGeometryId": 63579,
      "isMetric": false,
      "scaledArea": 278.93825,
      "scaledLength": 74.0873,
      "scaledVolume": 0,
      "scaledHeight": 0,
      "scaledWidth": 0,
      "vertexCount": 4,
      "dropCount": 0,
      "itemPurchaseQuantity": 0,
      "labels": [
        {
          "takeoffLabelGroupId": 14599,
          "takeoffLabelGroupName": "Label Group",
          "takeoffLabelId": 3516107,
          "takeoffLabelName": "Label"
        }
      ],
      "heightInInches": 0,
      "widthInInches": 0,
      "depthInInches": 0,
      "riseInInches": 0,
      "runInInches": 0,
      "dropLengthInInches": 0,
      "multiplier": 1,
      "viewportId": 1,
      "pageId": 1,
      "scaleId": 5,
      "scale": "3/32\" = 1'",
      "totalMeasuredQty": 278.93825
    }
  ],
  {
    "name": "TotalMeasuredQty",
    "prompt": "Total Measured Qty",
    "value": 278.93825
  },
  {
    "name": "DisplayUnit",
    "prompt": "Display Unit",
    "value": "Sq Ft"
  }
],
"links": [],
```

```
    "href": "http://api.ct-test.net/api/ReportTakeoffSummary/1"
  }
],
"query": [],
"template": {
  "data": [
    {
      "name": "TakeoffTemplateId",
      "prompt": "Takeoff Template Id",
      "type": "Value"
    }
  ]
},
"version": "1.0",
"href":
```

```
"http://api.ct-test.net/api/v1/Takeoffs/1/ReportTakeoffSummary?ref=1"  
  }  
}
```

Item Reports

Collection holding each takeoff template and their associated data

- Accepts: json
- Template: ReportItemList
- Actions:
 - GET /api/v1/Takeoffs/{id}/ReportItemList
 - Returns a collection of takeoff templates with all its associated data.
- Template

```
{  
  "Template": {  
    "Data": [  
      {  
        "name": "AssyItemId",  
        "prompt": "Assy Item Id",  
        "type": "Value"  
      }  
    ],  
    "Version": "1.0",  
    "Href": "https://api.ct-test.net/api/ReportItemList/Template"  
  }  
}
```

Request

```
GET https://api.ct-test.net/api/v1/Takeoffs/[ID]/ReportItemList
```

Response:

```
{  
  "collection": {  
    "error": {},  
    "links": [  
      {  
        "rel": "template",  
        "href": "https://api.ct-test.net/api/ReportItemList/Template"  
      }  
    ],  
    "items": [  
      {  
        "name": "AssyItemId",  
        "prompt": "Assy Item Id",  
        "type": "Value"  
      }  
    ]  
  }  
}
```

```
{
  "data": [
    {
      "name": "AssyItemId",
      "prompt": "Assy Item Id",
      "value": 1
    },
    {
      "name": "MeasurementTypeId",
      "prompt": "Measurement Type Id",
      "value": 1
    },
    {
      "name": "Name",
      "prompt": "Name",
      "value": "Name "
    },
    {
      "name": "AccountingCode",
      "prompt": "Accounting Code",
      "value": ""
    },
    {
      "name": "Description",
      "prompt": "Description",
      "value": ""
    },
    {
      "name": "Quantity",
      "prompt": "Quantity",
      "value": 11.8186544
    },
    {
      "name": "UseMetric",
      "prompt": "Use Metric",
      "value": false
    },
    {
      "name": "MeasuredValue",
      "prompt": "Measured Value",
      "value": 50
    },
    {
      "name": "UnitOfMeasureId",
      "prompt": "Unit Of Measure Id",
      "value": 1
    },
    {
      "name": "isMetricUnit",
      "prompt": "is Metric Unit",

```



```
    "value": false
  },
  {
    "name": "PurchaseValue",
    "prompt": "Purchase Value",
    "value": 1
  },
  {
    "name": "PurchaseUnitOfMeasure",
    "prompt": "Purchase Unit Of Measure",
    "value": "roll"
  },
  {
    "name": "Formula",
    "prompt": "Formula",
    "value": ""
  },
  {
    "name": "CostTypeId",
    "prompt": "Cost Type Id",
    "value": 3
  },
  {
    "name": "CostTypeName",
    "prompt": "Cost Type Name",
    "value": "Material"
  },
  {
    "name": "Cost",
    "prompt": "Cost",
    "value": 10
  },
  {
    "name": "TakeoffTemplateId",
    "prompt": "Takeoff Template Id",
    "value": 1
  },
  {
    "name": "TakeoffTemplateName",
    "prompt": "Takeoff Template Name",
    "value": "Template Name"
  },
  {
    "name": "Variables",
    "prompt": "Variables",
    "array": []
  },
  {
    "name": "Geometries",
    "prompt": "Geometries",
```

```
    "array": [
      {
        "assyGeometryId": 1,
        "isMetric": false,
        "scaledArea": 278.93825,
        "scaledLength": 74.0873,
        "scaledVolume": 0,
        "scaledHeight": 0,
        "scaledWidth": 0,
        "vertexCount": 4,
        "dropCount": 0,
        "itemPurchaseQuantity": 5.578765,
        "labels": [
          {
            "takeoffLabelGroupId": 1,
            "takeoffLabelGroupName": "Label Group Name",
            "takeoffLabelId": 1,
            "takeoffLabelName": "Label"
          }
        ],
        "heightInInches": 0,
        "widthInInches": 0,
        "depthInInches": 0,
        "riseInInches": 0,
        "runInInches": 0,
        "dropLengthInInches": 0,
        "multiplier": 1,
        "viewportId": 0,
        "pageId": 0,
        "scaleId": 5,
        "scale": "3/32\" = 1'",
        "totalMeasuredQty": 278.93825
      }
    ]
  },
  "links": [],
  "href": "https://api.ct-test.net/api/ReportItemList/1"
},
"query": [],
"template": {
  "data": [
    {
      "name": "AssyItemId",
      "prompt": "Assy Item Id",
      "type": "Value"
    }
  ]
},
},
```

```
"version": "1.0",  
"href":
```

```
"https://api.ct-test.net/api/v1/Takeoffs/1/ReportItemList?ref=1"  
  }  
}
```

Users

A STACK user.

- Accepts: json
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Users/
 - Returns a collection containing the currently authorized user.
- GET /api/Users/{UserId}
 - Returns a collection containing the specified user by user id.
- GET /api/Projects/{ProjectId}/Users
 - Returns a collection containing the users that have been given access to the specified project.
- POST /api/Projects/{ProjectId}/Users
 - Grants the user access to the specified project.
- Template

```
{  
  "Template": {  
    "Data": [  
      {"Name": "UserId", "Value": USER_ID},  
      {"Name": "FirstName", "Value": "{First Name}"},  
      {"Name": "LastName", "Value": "{Last Name}"},  
      {"Name": "CompanyName", "Value": "{Company Name}"}  
    ],  
    "Version": "1.0",  
    "Href": "https://api.ct-test.net/api/Users/Template/"  
  }  
}
```

Countries

A Country.

- Accepts: json
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/Countries
 - Returns a collection containing all countries.
- Template

```

{
  "Template": {
    "Data": [
      { "name": "CountryId", "Value": {Country Id}},
      { "name": "Name", "Value": "{Name}" }
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/Countries/Template/"
  }
}

```

States

A US State.

- Accepts: json
- Actions:

All of the routes below are available for testing from the drop down list on the Partner Integration Test Page

- GET /api/States
 - Returns a collection containing all states.
- Template

```

{
  "Template": {
    "Data": [
      { "name": "StateId", "Value": "{State Id}" },
      { "name": "StateName", "Value": "{State Name}" },
      { "name": "Abbreviation", "Value": "{Abbreviation}" }
    ],
    "Version": "1.0",
    "Href": "https://api.ct-test.net/api/States/Template/"
  }
}

```

Printing

The pages within any project can be printed by downloading a PDF with a included markup. The API's to achieve this require four steps. First get the list of pages that are included in the project, create a print job and add the pages to it and finally start the generation of the PDF. The process will run in the background and will take longer depending on the number of pages in the project. At any time the print job status can be requested and, when complete, will include a URL to the PDF to be downloaded.

List Pages

Get a list of pages for a project. The key information needed in this response is the ViewportId which will be required to add pages to the print job.

Request

```
GET https://api.stackct.com/api/v1/Takeoffs/[TAKEOFF ID]/Pages
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.stackct.com/api/Pages/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "PageId",
            "prompt": "Page Id",
            "value": PAGE_ID
          },
          {
            "name": "PageName",
            "prompt": "Page Name",
            "value": "A-0 "
          },
          {
            "name": "FileName",
            "prompt": "File Name",
            "value": "unique-file-name"
          },
          {
            "name": "ProjectId",
            "prompt": "Project Id",
            "value": PROJECT_ID
          },
          {
            "name": "EncodeStatus",
            "prompt": "Encode Status",
            "value": 3
          },
          {
            "name": "EncodeTries",
            "prompt": "Encode Tries",
            "value": 1
          }
        ]
      }
    ]
  }
}
```

```
{
  "name": "Height",
  "prompt": "Height",
  "value": 7700
},
{
  "name": "Width",
  "prompt": "Width",
  "value": 11900
},
{
  "name": "XRes",
  "prompt": "X Res",
  "value": 350
},
{
  "name": "YRes",
  "prompt": "Y Res",
  "value": 350
},
{
  "name": "FolderId",
  "prompt": "Folder Id",
  "value": FOLDER_ID
},
{
  "name": "FileId",
  "prompt": "File Id",
  "value": FILE_ID
},
{
  "name": "Visible",
  "prompt": "Visible",
  "value": true
},
{
  "name": "ViewportId",
  "prompt": "Viewport Id",
  "value": VIEWPORT_ID
},
{
  "name": "DzcURL",
  "prompt": "Dzc URL"
},
{
  "name": "CollectionURL",
  "prompt": "Collection URL",
  "value": ""
},
{
```

```
    "name": "TileSize",
    "prompt": "Tile Size",
    "value": 0
  },
  {
    "name": "Rotation",
    "prompt": "Rotation",
    "value": 0
  },
  {
    "name": "Source",
    "prompt": "Source"
  },
  {
    "name": "SourceId",
    "prompt": "Source Id"
  },
  {
    "name": "folderPath",
    "prompt": "folder Path"
  },
  {
    "name": "numGeometries",
    "prompt": "num Geometries",
    "value": 0
  },
  {
    "name": "numNotations",
    "prompt": "num Notations",
    "value": 0
  },
  {
    "name": "HasPreviewThumbnail",
    "prompt": "Has Preview Thumbnail",
    "value": false
  },
  {
    "name": "HasVectorText",
    "prompt": "Has Vector Text",
    "value": true
  }
],
"links": [
  {
    "rel": "",
    "href": "https://api.stackct.com/api/Projects/PROJECT_ID"
  },
  {
    "rel": "",
    "href": "https://api.stackct.com/api/Folders/FOLDER_ID"
  }
]
```



```
    }
  ],
  "href": "https://api.stackct.com/api/Pages/PAGE_ID"
},

... MORE

]
},
"version": "1.0",
"href":
"https://api.stackct.com:443/api/v1/Takeoffs/TAKEOFF_ID/Pages"
}
```

```
}
```

Create a Print Job

Creating a print job generates a print job id that will be needed to track page additions to the job and the retrieval of status.

Request

```
POST https://api.stackct.com/api/v1/PrintJobs

{
  "template": {
    "data": [
      {
        "name": "TakeoffId",
        "value": [TAKEOFF ID]
      }
    ]
  }
}
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.stackct.com/api/PrintJobs/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "PrintJobId",
            "prompt": "Print Job Id",
            "value": 1234
          },
          {
            "name": "PrintJobBlobName",
            "prompt": "Print Job Blob Name",
            "value": ""
          }
        ]
      }
    ]
  }
}
```

```
{
  "name": "TakeoffId",
  "prompt": "Takeoff Id",
  "value": TAKEOFF_ID
},
{
  "name": "UserId",
  "prompt": "User Id",
  "value": USER_ID
},
{
  "name": "IsAvailable",
  "prompt": "Is Available",
  "value": true
},
{
  "name": "CreationStatus",
  "prompt": "Creation Status",
  "value": -1
},
{
  "name": "DateCreated",
  "prompt": "Date Created",
  "object": "0001-01-01T00:00:00"
},
{
  "name": "DateModified",
  "prompt": "Date Modified",
  "object": "0001-01-01T00:00:00"
}
],
"links": [],
"href": "https://api.stackct.com/api/PrintJobs/1234"
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "PrintJobId",
      "prompt": "Print Job Id",
      "type": "Value"
    },
    {
      "name": "PrintJobBlobName",
      "prompt": "Print Job Blob Name",
      "type": "Value"
    },
    {
      "name": "TakeoffId",
```

```
    "prompt": "Takeoff Id",
    "type": "Value"
  },
  {
    "name": "IsAvailable",
    "prompt": "Is Available",
    "type": "Value"
  },
  {
    "name": "CreationStatus",
    "prompt": "Creation Status",
    "type": "Value"
  }
]
},
"version": "1.0",
"href": "https://api.stackct.com:443/api/v1/PrintJobs"
}
```

```
}
```

Add Page to Print Job

Each individual page needs to be added to the print job to include it in the final PDF.

Request

```
POST https://api.stackct.com/api/v1/PrintJobs/[PRINT JOB ID]/PrintPages

{
  "template": {
    "error": {},
    "data": [
      {
        "name": "PrintJobId",
        "value": [PRINT JOB ID]
      },
      {
        "name": "ViewportId",
        "value": [VIEWPORT ID]
      }
    ]
  }
}
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.stackct.com/api/PrintJobPages/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "PrintJobPageId",
            "prompt": "Print Job Page Id",
            "value": 1234
          }
        ],
      }
    ]
  }
}
```

```
{
  "name": "PrintJobId",
  "prompt": "Print Job Id",
  "value": 1234
},
{
  "name": "ViewportId",
  "prompt": "Viewport Id",
  "value": VIEWPORT_ID
},
{
  "name": "DateCreated",
  "prompt": "Date Created",
  "object": "2018-03-10T21:02:08.9460326+00:00"
},
{
  "name": "FileName",
  "prompt": "File Name"
},
{
  "name": "PageName",
  "prompt": "Page Name"
}
],
"links": [],
"href": "https://api.stackct.com/api/PrintJobPages/1234"
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "PrintJobPageId",
      "prompt": "Print Job Page Id",
      "type": "Value"
    },
    {
      "name": "PrintJobId",
      "prompt": "Print Job Id",
      "type": "Value"
    },
    {
      "name": "ViewportId",
      "prompt": "Viewport Id",
      "type": "Value"
    }
  ]
},
"version": "1.0",
"href":
```

"https://api.stackct.com:443/api/v1/PrintJobs/199499/PrintPages"

```
}  
}
```

Schedule Print job

Once all the pages have been added, the print job must be scheduled the generation of the PDF. This occurs in the background, with the response to this API request just indicating the success or failure of the scheduling of the print.

Request

```
PUT https://api.stackct.com/api/v1/PrintJobs/[PRINT JOB ID]  
  
{  
  "template": {  
    "error": {},  
    "data": [  
      {  
        "name": "PrintJobId",  
        "value": 1234  
      }  
    ]  
  },  
  "error": {  
    "title": "",  
    "code": "",  
    "message": ""  
  }  
}
```

Response

```
{  
  "collection": {  
    "error": {},  
    "links": [  
      {  
        "rel": "template",  
        "href": "https://api.stackct.com/api/PrintJobs/Template"  
      }  
    ],  
    "items": [  
      {  
        "data": [  
          {  
            "name": "PrintJobId",
```



```
    "prompt": "Print Job Id",
    "value": 1234
  },
  {
    "name": "PrintJobBlobName",
    "prompt": "Print Job Blob Name",
    "value": ""
  },
  {
    "name": "TakeoffId",
    "prompt": "Takeoff Id",
    "value": TAKEOFF_ID
  },
  {
    "name": "UserId",
    "prompt": "User Id",
    "value": 0
  },
  {
    "name": "IsAvailable",
    "prompt": "Is Available",
    "value": true
  },
  {
    "name": "CreationStatus",
    "prompt": "Creation Status",
    "value": -1
  },
  {
    "name": "DateCreated",
    "prompt": "Date Created",
    "object": "0001-01-01T00:00:00"
  },
  {
    "name": "DateModified",
    "prompt": "Date Modified",
    "object": "0001-01-01T00:00:00"
  }
],
"links": [],
"href": "https://api.stackct.com/api/PrintJobs/1234"
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "PrintJobId",
      "prompt": "Print Job Id",
      "type": "Value"
    }
  ]
}
```

```
    },
    {
      "name": "PrintJobBlobName",
      "prompt": "Print Job Blob Name",
      "type": "Value"
    },
    {
      "name": "TakeoffId",
      "prompt": "Takeoff Id",
      "type": "Value"
    },
    {
      "name": "IsAvailable",
      "prompt": "Is Available",
      "type": "Value"
    },
    {
      "name": "CreationStatus",
      "prompt": "Creation Status",
      "type": "Value"
    }
  ]
},
"version": "1.0",
"href": "https://api.stackct.com:443/api/v1/PrintJobs/1234"
}
```

```
}
```

Print Job Status

As the print job runs in the background, its status can be retrieved to determine if it is complete or not. From the response the PrintJobBlobName will indicate the URL from which the PDF can be downloaded.

Request

```
GET https://api.stackct.com/api/v1/PrintJobs/[PRINT JOB ID]
```

Response

```
{
  "collection": {
    "error": {},
    "links": [
      {
        "rel": "template",
        "href": "https://api.stackct.com/api/PrintJobs/Template"
      }
    ],
    "items": [
      {
        "data": [
          {
            "name": "PrintJobId",
            "prompt": "Print Job Id",
            "value": 1234
          },
          {
            "name": "PrintJobBlobName",
            "prompt": "Print Job Blob Name",
            "value": "[PDF STORAGE]/PTIOXFCW.pdf"
          },
          {
            "name": "TakeoffId",
            "prompt": "Takeoff Id",
            "value": TAKEOFF_ID
          },
          {
            "name": "UserId",
            "prompt": "User Id",
            "value": USER_UD
          }
        ]
      }
    ]
  }
}
```

```
{
  "name": "IsAvailable",
  "prompt": "Is Available",
  "value": true
},
{
  "name": "CreationStatus",
  "prompt": "Creation Status",
  "value": 3
},
{
  "name": "DateCreated",
  "prompt": "Date Created",
  "object": "2018-03-12T15:09:54.73"
},
{
  "name": "DateModified",
  "prompt": "Date Modified",
  "object": "2018-03-12T15:10:04.307"
}
],
"links": [],
"href": "https://api.stackct.com/api/PrintJobs/1234"
}
],
"query": [],
"template": {
  "data": [
    {
      "name": "PrintJobId",
      "prompt": "Print Job Id",
      "type": "Value"
    },
    {
      "name": "PrintJobBlobName",
      "prompt": "Print Job Blob Name",
      "type": "Value"
    },
    {
      "name": "TakeoffId",
      "prompt": "Takeoff Id",
      "type": "Value"
    },
    {
      "name": "IsAvailable",
      "prompt": "Is Available",
      "type": "Value"
    },
    {
      "name": "CreationStatus",
```

```
    "prompt": "Creation Status",
    "type": "Value"
  }
]
},
"version": "1.0",
"href": "https://api.stackct.com:443/api/v1/PrintJobs/1234"
```

```
}  
}
```

Appendix - Line Trace

Create and Share Project with Customer

This trace attempts to show how a 2 legged and 3 legged authentication distinguish access to projects and the sharing of projects with customers.

```
# API Trace Sample  
  
## Input Data:  
  
* Customer User: "userId":102091  
* Partner id: 128  
* Partner secret:  
9c944779774840c998da3a74b20174d586d8103134104a65a8f82172718f0f0d  
* Partner Basic header:  
MTI4OjIjOTQ0Nzc5Nzc0ODQwYzk5OGRhM2E3NGIyMDE3NGQ1ODZkODEwMzEzNDEwNGE2NWE4  
ZjgyMTcyNzE4ZjBmMGQ=  
* Partner User: "userId":102090  
  
## Partner Authentication.  
  
### Partners 2 Legged OAuth  
  
    POST /OAuth/Token HTTP/1.1  
    Accept-Language: en-US  
    Authorization: Basic  
MTI4OjIjOTQ0Nzc5Nzc0ODQwYzk5OGRhM2E3NGIyMDE3NGQ1ODZkODEwMzEzNDEwNGE2NWE4  
ZjgyMTcyNzE4ZjBmMGQ=  
    Connection: close  
    Content-Type: application/x-www-form-urlencoded  
    Host: localhost  
    User-Agent: Toxic/2.0.11  
    Content-Length: 29  
  
    grant_type=client_credentials  
  
    HTTP/1.1 200 OK  
    Connection: close  
    Date: Tue, 05 Feb 2019 19:54:30 GMT  
    Content-Type: application/json;charset=UTF-8  
    Server: Kestrel  
    Content-Length: 1737  
    Cache-Control: no-cache  
    Pragma: no-cache  
    Expires: Thu, 01 Jan 1970 00:00:00 GMT
```

X-Server: webapi/1.0.0.20190205151352

```
{ "scope": "offline_access", "token_type": "Bearer", "access_token": "CfDJ8JtKk-1PCB5Ou-vbQT5lzoSLSYB0FK9EOfYU93RrR4B9UYuM9pstSF3uOLpMjsslff0WAINkXkPSI1FxEQrIDhYW926h8kdu7Gfqdw2NgK02Wj-U2Bu2YYDSXi9bLTfBGsq6HQ44t-MKi_MEEU8xvJYWj3W5Q0ggwLZ9L0sth5MLMuBmbgP2PJ56-qT3U6cPeo49TUESz7fJkVbttbUrXwZw7YeFExLKiy72q1Bn808X9nwnnqZIPdmXeeAHZl0GgLPXpck_IadCnOdOy85EzmVIDQ8IDTGDPH4lQX9rnG8nisaC2ZIVyt5ZF2lytpx0lmKlyC23dIUoLW3xDpHHXsWTwaij7aGHhwYEft_j0OuFIJjtYWwbGRSHLtilBBJBgEglsZ1ujUq7SQwhMe3mysI23n71CPwPEtXPGMYkdDiA9j0Z_GPPCP8zViS9vvvS7dRDvjp6LyxcdLDFw8gnEMyfpflgG3NYpAzsQqMRqPs756ImwOzYZC19qawbGbiIJtg_NRMGNI_GIGvdMjiIbtjWquilKxZo0DABhIzzi8668QDayCgqsj55Min4dVSpzx-CfRzSRGLts3JPocbz9XDpGmz9n-E__paqTTtAHXF6sIk4v8E2FTpzzb7qU5azwU5U0-TqaK9zvNK62-OOSB7up_TzTI448Kbb3iREJSspwPp6MK37ie88papr3Z0iiWqpalHN4xZKXuivrExXB0", "expires_in": 28800, "refresh_token": "CfDJ8JtKk-1PCB5Ou-vbQT5lzoQ4JB8gb1PyLPetENUTrd87zk8NbU6pwrX9fUtXhkvc4CPqMxXHDJz4UOhwVUv2cJYE8bzeuj5sKWO7MAUT-xnzIh7I6-IzPn5RNXYZ1fEKZ8ZT-wpXdgJdG2bwsQDUEJuBMSBQwB04y-29b6hjVDS6l3BFqTmvwoVETj5C_oqxwRd58FYG-h2RIs1FND63-KJN4f71wPoolr6FJxAKFcsjTmvfUZIHW9LuCdC16gc3MtVARMuH0aBkdzJ9aA_EJ25s0Qqd0tzhYoD8h2rsFiqVZIXCOj1sFskKDMOd9Z2qh0q3B10aKikNUKbDJRWZftTQAgGD3S7Lvz1jWX3XB8bHU6yuaPflr4OpCi4zLYj57-71Jbd0YGOWXB42vktD-C1UMwE--Pe5jfcfEQk_GY-1GhDlHMDxMAalHWQkDSpBbAle3FjkuP2BQ5reZWH7cBwT_kBwzkhW69-KhRdibnhnnKW3f8qosMyQPvOZrQfT6OxldaUm_hnphivWeBlLPiDffx66pF1MZ9-uXUxj4gOB-fYJQyW5CdyEfDPuBsFHOTV_1BA6EjL3Yw6QULaMz64UA-y82wfkLKR4y1D3L49PGztNhChsEhHEHggD9dbogJEAJsjsWY8Qb_4j6ITLUkudzWhVYr-5VCH2IEAqmaLJHbL2tha-4OYy9MEex1UdMxPXoTY30HiXRk5xLYh9-nAzdXAxMDbFMVJ2jbocidc00gLGqfZhwKqvXtesTGvK8_g5NLNcu5t5BjuofwiFVZrRtqnb-uwFimGHzwwS5goRWAFADro2kyIw5d1wygfl8Cj0JoPvDLE2cbDk8cmjrCueHQRHNugd7xrCfKb3_tpz-MchfzAepfAWiWBEg" }
```

Partner Create Projects

Create first project. Note use of partner access token to create project that will be owned by the partner.

POST /api/v1/Projects HTTP/1.1

Accept-Language: en-US

Authorization: Bearer

```
CfDJ8JtKk-1PCB5Ou-vbQT5lzoSLSYB0FK9EOfYU93RrR4B9UYuM9pstSF3uOLpMjsslff0WAINkXkPSI1FxEQrIDhYW926h8kdu7Gfqdw2NgK02Wj-U2Bu2YYDSXi9bLTfBGsq6HQ44t-MKi_MEEU8xvJYWj3W5Q0ggwLZ9L0sth5MLMuBmbgP2PJ56-qT3U6cPeo49TUESz7fJkVbttbUrXwZw7YeFExLKiy72q1Bn808X9nwnnqZIPdmXeeAHZl0GgLPXpck_IadCnOdOy85EzmVIDQ8IDTGDPH4lQX9rnG8nisaC2ZIVyt5ZF2lytpx0lmKlyC23dIUoLW3xDpHHXsWTwaij7aGHhwYEft_j0OuFIJjtYWwbGRSHLtilBBJBgEglsZ1ujUq7SQwhMe3mysI23n71CPwPEtXPGMYkdDiA9j0Z_GPPCP8zViS9vvvS7dRDvjp6LyxcdLDFw8gnEMyfpflgG3NYpAzsQqMRqPs756ImwOzYZC19qawbGbiIJtg_NRMGNI_GIGvdMjiIbtjWquilKxZo0DABhIzzi8668QDayCgqsj55Min4dVSpzx-CfRzSRGLts3JPocbz9XDpGmz9n-E__paqTTtAHXF6sIk4v8E2FTpzzb7qU5azwU5U0-TqaK9zvNK62-OOSB7up_TzTI448Kbb3iREJSspwPp6MK37ie88papr3Z0iiWqpalHN4xZKXuivrExXB0
```

Connection: close

Content-Type: application/json

Host: localhost
User-Agent: Toxic/2.0.11 ()
Content-Length: 1308

```
{
  "template": {
    "error": {},
    "data": [
      {
        "name": "ProjectId",
        "value": 0
      },
      {
        "name": "Name",
        "value": "project-1549396471954"
      },
      {
        "name": "Notes",
        "value": null
      },
      {
        "name": "SourceId",
        "value": null
      },
      {
        "name": "Source",
        "value": null
      },
      {
        "name": "BidDate",
        "object": "2019-02-05 19:54:31.958+0000"
      },
      {
        "name": "ExpirationDate",
        "object": "2019-02-15 19:54:31.955+0000"
      },
      {
        "name": "DateCreated",
        "object": "2018-05-10T21:39:07.691Z"
      },
      {
        "name": "AddressLine1",
        "value": ""
      },
      {
        "name": "AddressLine2",
        "value": null
      },
      {
        "name": "City",
```



```
        "value": null
      },
      {
        "name": "StateId",
        "value": null
      },
      {
        "name": "PostalCode",
        "value": null
      },
      {
        "name": "CountryId",
        "value": null
      },
      {
        "name": "HasPlans",
        "value": false
      },
      {
        "name": "RemainingFlexUploads",
        "value": 0
      }
    ]
  },
  "error": {
    "title": "",
    "code": "",
    "message": ""
  }
}
```

```
HTTP/1.1 200 OK
Connection: close
Date: Tue, 05 Feb 2019 19:54:30 GMT
Content-Type: application/json; charset=utf-8
Server: Kestrel
Cache-Control: no-cache
Pragma: no-cache
Transfer-Encoding: chunked
Expires: -1
X-Server: webapi/1.0.0.20190205151352
```

```
{ "collection": { "error": {}, "links": [ { "rel": "template", "href": "http://localhost/api/Projects/Template" } ], "items": [ { "data": [ { "name": "ProjectId", "prompt": "Project Id", "value": 200 }, { "name": "CompanyId", "prompt": "CompanyId", "value": 107898 }, { "name": "Name", "prompt": "Project Name", "value": "project-1549396471954" }, { "name": "Notes", "prompt": "Notes", "value": "" }, { "name": "Storage", "prompt": "Storage", "value": 2 }, { "name": "SourceId", "prompt": "Source" } ] } } }
```

```

Id", "value": ""}, {"name": "Source", "prompt": "Source", "value": ""}, {"name": "
BidDate", "prompt": "Bid
Date", "object": "2019-02-05T14:54:31.958Z"}, {"name": "ExpirationDate", "pro
mpt": "Expiration
Date", "object": "2019-02-15T14:54:31.955Z"}, {"name": "DateCreated", "prompt
": "Date
Created", "object": "2019-02-05T19:54:31.987"}, {"name": "DateModified", "pro
mpt": "Date
Modified", "object": "2019-02-05T19:54:31.987"}, {"name": "EventDate", "promp
t": "Event
Date", "object": "0001-01-01T00:00:00"}, {"name": "sEventDate", "prompt": "sEv
ent Date"}, {"name": "TakeoffIds", "prompt": "Takeoff
Ids", "array": []}, {"name": "AddressLine1", "prompt": "Address
Line1", "value": ""}, {"name": "AddressLine2", "prompt": "Address
Line2", "value": ""}, {"name": "City", "prompt": "City", "value": ""}, {"name": "S
tateId", "prompt": "State
Id", "value": 0}, {"name": "PostalCode", "prompt": "Postal
Code", "value": ""}, {"name": "CountryId", "prompt": "Country
Id", "value": 0}, {"name": "HasPlans", "prompt": "Has
Plans", "value": false}, {"name": "RemainingFlexUploads", "prompt": "Remaining
Flex
Uploads", "value": 3}], "links": [{"rel": "Folders", "href": "http://localhost/
api/Projects/200/Folders"}, {"rel": "Users", "href": "http://localhost/api/P
rojects/200/Users"}], "href": "http://localhost/api/Projects/200"}], "query
": [], "template": {"data": [{"name": "ProjectId", "prompt": "Project
Id", "type": "Value"}, {"name": "Name", "prompt": "Project
Name", "type": "Value"}, {"name": "Notes", "prompt": "Notes", "type": "Value"}, {"
name": "SourceId", "prompt": "Source
Id", "type": "Value"}, {"name": "Source", "prompt": "Source", "type": "Value"}, {"
name": "BidDate", "prompt": "Bid
Date", "type": "Object"}, {"name": "ExpirationDate", "prompt": "Expiration
Date", "type": "Object"}, {"name": "DateCreated", "prompt": "Date
Created", "type": "Object"}, {"name": "AddressLine1", "prompt": "Address
Line1", "type": "Value"}, {"name": "AddressLine2", "prompt": "Address
Line2", "type": "Value"}, {"name": "City", "prompt": "City", "type": "Value"}, {"
name": "StateId", "prompt": "State
Id", "type": "Value"}, {"name": "PostalCode", "prompt": "Postal
Code", "type": "Value"}, {"name": "CountryId", "prompt": "Country
Id", "type": "Value"}, {"name": "HasPlans", "prompt": "Has
Plans", "type": "Value"}, {"name": "RemainingFlexUploads", "prompt": "Remainin
g Flex
Uploads", "type": "Value"}]}], "version": "1.0", "href": "http://localhost/api/
v1/Projects"}}

```

Create second project. Note same partner access token.

```

POST /api/v1/Projects HTTP/1.1
Accept-Language: en-US
Authorization: Bearer
CfdJ8JtKk-1PCB5Ou-vbQT5lzoSLSYB0FK9EOfYU93RrR4B9UYuM9pstSF3uOLpMjslff0WA

```

INkXkPSI1FxEQrIDhYW926h8kdu7Gfqdw2NgK02Wj-U2Bu2YYDSXi9bLTfBGsq6HQ44t-MKi
_MEEU8xvJYWj3W5Q0ggwlZ9L0sth5MLMuBmbgP2PJ56-qT3U6cPeo49TUESz7fJkVbttbUrX
wZw7YeFExLKlY72q1Bn808X9nwnnqZIPdmXeeAHZl0GgLpXPck_IadCnOdOy85EzmVIdQ8ID
TGDPH4lQX9rnG8nisaC2ZIVyt5ZF21ytpx0lmK1yC23dIUoLW3xDpHHXSWTwaIj7aGHhwYef
t_j0OuFIJjtYWwbGRSHLtilBBJBgEg1sZlujuQ7SQwhMe3mynsI23n7lCPwPETXPGMYkddiA
9j0Z_GPPCP8zViS9vvvS7dRDvjp6LyxcdLDFw8gnEMYfpflgG3NYpAzsQqMRqPs756ImwOzY
ZC19qawbGbiIJtg_NRmGNI_GIGvdMjiIbtjWquilkxZo0DABhIzzi8668QDayCgqsj55Min4
dVSpzx-CfRzSRGLts3JPocbz9XDpgmz9n-E____paqTTtAHXF6sIk4v8E2FTpzzb7qU5azwU5
U0-TqaK9zvNK62-OOSB7up_TzTI448Kbb3iREJSspwPp6MK37ie88papr3Z0iiWqpalHN4xZ
KXuivrExXB0

Connection: close
Content-Type: application/json
Host: localhost
User-Agent: Toxic/2.0.11 (esumerfd)
Content-Length: 1308

```
{  
  "template": {  
    "error": {},  
    "data": [  
      {  
        "name": "ProjectId",  
        "value": 0  
      },  
      {  
        "name": "Name",  
        "value": "project-1549396472025"  
      },  
      {  
        "name": "Notes",  
        "value": null  
      },  
      {  
        "name": "SourceId",  
        "value": null  
      },  
      {  
        "name": "Source",  
        "value": null  
      },  
      {  
        "name": "BidDate",  
        "object": "2019-02-05 19:54:32.025+0000"  
      },  
      {  
        "name": "ExpirationDate",  
        "object": "2019-02-15 19:54:32.025+0000"  
      },  
      {  
        "name": "DateCreated",
```

```
    "object": "2018-05-10T21:39:07.691Z"
  },
  {
    "name": "AddressLine1",
    "value": ""
  },
  {
    "name": "AddressLine2",
    "value": null
  },
  {
    "name": "City",
    "value": null
  },
  {
    "name": "StateId",
    "value": null
  },
  {
    "name": "PostalCode",
    "value": null
  },
  {
    "name": "CountryId",
    "value": null
  },
  {
    "name": "HasPlans",
    "value": false
  },
  {
    "name": "RemainingFlexUploads",
    "value": 0
  }
]
},
"error": {
  "title": "",
  "code": "",
  "message": ""
}
}
```

```
HTTP/1.1 200 OK
Connection: close
Date: Tue, 05 Feb 2019 19:54:31 GMT
Content-Type: application/json; charset=utf-8
Server: Kestrel
Cache-Control: no-cache
Pragma: no-cache
```

Transfer-Encoding: chunked
Expires: -1
X-Server: webapi/1.0.0.20190205151352

```
{ "collection": { "error": {}, "links": [ { "rel": "template", "href": "http://localhost/api/Projects/Template" } ], "items": [ { "data": [ { "name": "ProjectId", "prompt": "Project Id", "value": 201 }, { "name": "CompanyId", "prompt": "CompanyId", "value": 107898 }, { "name": "Name", "prompt": "Project Name", "value": "project-1549396472025" }, { "name": "Notes", "prompt": "Notes", "value": "" }, { "name": "Storage", "prompt": "Storage", "value": 2 }, { "name": "SourceId", "prompt": "Source Id", "value": "" }, { "name": "Source", "prompt": "Source", "value": "" }, { "name": "BidDate", "prompt": "Bid Date", "object": "2019-02-05T14:54:32.025Z" }, { "name": "ExpirationDate", "prompt": "Expiration Date", "object": "2019-02-15T14:54:32.025Z" }, { "name": "DateCreated", "prompt": "Date Created", "object": "2019-02-05T19:54:32.05" }, { "name": "DateModified", "prompt": "Date Modified", "object": "2019-02-05T19:54:32.05" }, { "name": "EventDate", "prompt": "Event Date", "object": "0001-01-01T00:00:00" }, { "name": "sEventDate", "prompt": "sEvent Date" }, { "name": "TakeoffIds", "prompt": "Takeoff Ids", "array": [] }, { "name": "AddressLine1", "prompt": "Address Line1", "value": "" }, { "name": "AddressLine2", "prompt": "Address Line2", "value": "" }, { "name": "City", "prompt": "City", "value": "" }, { "name": "StateId", "prompt": "State Id", "value": 0 }, { "name": "PostalCode", "prompt": "Postal Code", "value": "" }, { "name": "CountryId", "prompt": "Country Id", "value": 0 }, { "name": "HasPlans", "prompt": "Has Plans", "value": false }, { "name": "RemainingFlexUploads", "prompt": "Remaining Flex Uploads", "value": 3 } ], "links": [ { "rel": "Folders", "href": "http://localhost/api/Projects/201/Folders" }, { "rel": "Users", "href": "http://localhost/api/Projects/201/Users" } ], "href": "http://localhost/api/Projects/201" }, "query": [ ], "template": { "data": [ { "name": "ProjectId", "prompt": "Project Id", "type": "Value" }, { "name": "Name", "prompt": "Project Name", "type": "Value" }, { "name": "Notes", "prompt": "Notes", "type": "Value" }, { "name": "SourceId", "prompt": "Source Id", "type": "Value" }, { "name": "Source", "prompt": "Source", "type": "Value" }, { "name": "BidDate", "prompt": "Bid Date", "type": "Object" }, { "name": "ExpirationDate", "prompt": "Expiration Date", "type": "Object" }, { "name": "DateCreated", "prompt": "Date Created", "type": "Object" }, { "name": "AddressLine1", "prompt": "Address Line1", "type": "Value" }, { "name": "AddressLine2", "prompt": "Address Line2", "type": "Value" }, { "name": "City", "prompt": "City", "type": "Value" }, { "name": "StateId", "prompt": "State Id", "type": "Value" }, { "name": "PostalCode", "prompt": "Postal Code", "type": "Value" }, { "name": "CountryId", "prompt": "Country
```

```
Id", "type": "Value"}, {"name": "HasPlans", "prompt": "Has  
Plans", "type": "Value"}, {"name": "RemainingFlexUploads", "prompt": "Remainin  
g Flex  
Uploads", "type": "Value"}]], "version": "1.0", "href": "http://localhost/api/  
v1/Projects"}}
```

```
# Customer Grant Authentication
```

```
## 3 Legged OAuth on behalf of Customer.
```

After redirecting customer browser to GET /OAuth/Authorize this is customer Grant of permissions.

```
POST  
/OAuth/Authorize?client_id=128&redirect_url=http%3A%2F%2Fpartner.redirect  
tUrl.com&state=partners-unique-value&response_type=code HTTP/1.1
```

```
Accept:  
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/a  
png,*/*;q=0.8
```

```
Accept-Encoding: gzip, deflate, br
```

```
Accept-Language: en-US,en;q=0.9
```

```
Cache-Control: max-age=0
```

```
Connection: close
```

```
Content-Type: application/x-www-form-urlencoded
```

```
Cookie:
```

```
TSS=CfDJ8JtKk-1PCB5Ou-vbQT5lzoSLVeAFk_lk7Sm-J6cnJE1BfNU5gOnreX4yU1RNcnN3  
1VJILXzjJP980kk_N8C17StMUocy65k74A9BgFsoWeY6u_SkdsEJAEpjrgiEKCi8pYBNo05G  
yMH1m5l0ApiJ3DToKkv0yswz23a4k0FnTKOHTlYDeTYLND41wZr0oH9-gaqlpnuLnPmNd30G  
i2JWvZHpY5OB3Uqrcf6JL1iHg2Gt_VUodQR-RwEm5eaps3-ZmK3cmIoInEpn3qYzDH7sIYpC  
XLnuAMWJ3dZ1vtaOr9Q1ozW92f9uMBvm9BytvDnNDJx8Wgn_YfwEwtEkyZYqbycsTedTcUr  
afbNju2AliTNbrjzPTyLsq0lGMLhxWvOvrUSEkzb3_pYGkHERkCIn28b3div6ta2J2owCY-V  
nGwSApaUojFB4EvIgtmWiNfIFhxSCLb36HHOI4faZmB312gEJLZ4HWWQ1StCIDHO6r2sE4y0  
2rkzReqAmd1NXxRs2j7aHc0e9P-zSr_iuFf4XKCqKvitpCrS9zDKMosrQ7a6OKGRCUvUneHX  
dgUORCb40veGTytvwmS4u-G0j-Dhsj3t74-UoVJUZE51x1Z3Pu_111f949eWdnFsHrUOrL6  
dFBS0tEn9KvZTK50TEmepv1a2ugSJfr6YcREJKSH6ONb7QntX168q3sa8gPd2-JGuyzCBx41  
xQzm-1kjLVqpn72UCNYtGAIFWP0ZH-iIJvtS3wPS413whrU1NbJq9sZI4-FiJblc7F10D1rx  
Owr4vKzcm6B9OX_eHeQ9ZvTLXITVpJ6LyT9saV1ZVMoI3tT1TCzuWgMGR-oYmIVeN6v7fCp  
liZ0evxhmPz5NPCKp8sJGX1Ne1bDB22Er1MBpalLfr2uCFNGTeT22fMU4irs55d19XANP3R  
v_3E0o__b0qy
```

```
Host: localhost
```

```
User-Agent: Toxic/2.0.11 ()
```

```
Content-Length: 45
```

```
Source=source&submit.Grant=Grant&submit=Grant
```

And Stacks redirection back to the partner url with the authorization code.

```
HTTP/1.1 302 Found
```

```
Connection: close
```

Date: Tue, 05 Feb 2019 19:54:31 GMT
Server: Kestrel
Content-Length: 0
Location:

http://partner.redirectUrl.com?code=CfDJ8JtKk-1PCB5Ou-vbQT5lzoQWJsPeLAQnGRd3OW4GSbTyB7NCd7tTOV1D23_k0p8zAEbsZqR0kU-GICXk074cHjKaqOH_m8BHOBKSfA4edTX4afB9KPtMrRaoEt8Jg9tz_1SDTTem9VZXP2U_i4cS6kbCsQuqiTwog3xrBzdWnLqYpWRnqMemAfchp5--ammPBhA41bnUBzDck25xWSIOBSBwMpe0S3qni2jX8iWwVSSKh5Mi1ONzdK09AoVk8N17WmT88NUBG-J-H5By6UkKsURSIsyipjuYGuWJ-YgtyuaRZ-xyTOYbmuDlfxTctjXigE7VkBZ6njIvkUr2OZmR0uyg0FoMztyU0-71AYvxnb1QJRtu_ImX_-IdZ06_XGTnGSM7qck8rm1PE4pSBcWONvLcrvCY2rF8Uo_lU2TA8PQ574XinwoOvUHTlIDFCOYcInYJCQL9ECRz2ixYy1ouWxmqrK59e_17JPBKgGRW_u3kuMoY9pbZj9IJYK5Vvk0GFMn9FCAqSt8NRgZ7DE7VPrdpq0jUpcYQpuAlLDov7-6Nz_h0P8xmyxDUR7RZITSbDhGAuzCBSy5p6N6BALzaeuJC81DFCC7v82uFiBc3EacggdhxUcYsh_dwhDk4AU-8_2bgV-WOCjjAM9p2CQJUu7ANQbnO_qNpBWT7iyy6RU2N3TjId9jt_HXOKywfRvnYNFmDGwGa6vwsYQKfc9ItqJplTGQiJeW2pQcAhtXDcq9X_HJYw7gBRgT0UjBQLrqeXtl8FPB6R_I1MOblValI4VGaarFVIyT1hXu4E6QCopd2E6H1SkIC-E88nlogN1BwvXqenLXIFi7sSjTjx805nwy88JklIVYYy5EeoOUCUF-xyCUTxyEf5WUzLMRyvUV-GD4ADD_QauzPNPA9I7MgMrc&state=partners-unique-value
X-Server: webapi/1.0.0.20190205151352

Partner can now get partner user access token with the the provided code.

POST /OAuth/Token HTTP/1.1
Accept-Language: en-US
Authorization: Basic
MTI4OjIjOTQ0Nzc5Nzc0ODQwYzk5OGRhM2E3NGIyMDE3NGQ1ODZkODEwMzEzNDEwNGE2NWE4ZjgyMTcyNzE4ZjBmMGQ=
Connection: close
Content-Type: application/x-www-form-urlencoded
Host: localhost
User-Agent: Toxic/2.0.11 ()
Content-Length: 1036

grant_type=authorization_code&code=CfDJ8JtKk-1PCB5Ou-vbQT5lzoQWJsPeLAQnGRd3OW4GSbTyB7NCd7tTOV1D23_k0p8zAEbsZqR0kU-GICXk074cHjKaqOH_m8BHOBKSfA4edTX4afB9KPtMrRaoEt8Jg9tz_1SDTTem9VZXP2U_i4cS6kbCsQuqiTwog3xrBzdWnLqYpWRnqMemAfchp5--ammPBhA41bnUBzDck25xWSIOBSBwMpe0S3qni2jX8iWwVSSKh5Mi1ONzdK09AoVk8N17WmT88NUBG-J-H5By6UkKsURSIsyipjuYGuWJ-YgtyuaRZ-xyTOYbmuDlfxTctjXigE7VkBZ6njIvkUr2OZmR0uyg0FoMztyU0-71AYvxnb1QJRtu_ImX_-IdZ06_XGTnGSM7qck8rm1PE4pSBcWONvLcrvCY2rF8Uo_lU2TA8PQ574XinwoOvUHTlIDFCOYcInYJCQL9ECRz2ixYy1ouWxmqrK59e_17JPBKgGRW_u3kuMoY9pbZj9IJYK5Vvk0GFMn9FCAqSt8NRgZ7DE7VPrdpq0jUpcYQpuAlLDov7-6Nz_h0P8xmyxDUR7RZITSbDhGAuzCBSy5p6N6BALzaeuJC81DFCC7v82uFiBc3EacggdhxUcYsh_dwhDk4AU-8_2bgV-WOCjjAM9p2CQJUu7ANQbnO_qNpBWT7iyy6RU2N3TjId9jt_HXOKywfRvnYNFmDGwGa6vwsYQKfc9ItqJplTGQiJeW2pQcAhtXDcq9X_HJYw7gBRgT0UjBQLrqeXtl8FPB6R_I1MOblValI4VGaarFVIyT1hXu4E6QCopd2E6H1SkIC-E88nlogN1BwvXqenLXIFi7sSjTjx805nwy88JklIVYYy5EeoOUCUF-xyCUTxyEf5WUzLMRyvUV-GD4ADD_QauzPNPA9I7MgMrc&state=partners-unique-value&redirect_uri=http%3A%2F%2Fpartner.redirectUrl.com

HTTP/1.1 200 OK
Connection: close
Date: Tue, 05 Feb 2019 19:54:31 GMT
Content-Type: application/json;charset=UTF-8
Server: Kestrel
Content-Length: 1737
Cache-Control: no-cache
Pragma: no-cache
Expires: Thu, 01 Jan 1970 00:00:00 GMT
X-Server: webapi/1.0.0.20190205151352

```
{ "scope": "offline_access", "token_type": "Bearer", "access_token": "CfDJ8JtKk-1PCB5Ou-vbQT5lzoS1EAwLdRo5VShf1ci-9rudJdGSWLybStF5QDuzZhig2XR5CarA25EiPxJ1trjwOenXxkZRHmZMNS_HqLA-OV68j6Ju-q640G0sO37zswjI7O8KAJqt6TRmzosboKRYHh45qz0jngKgLEHcOEWWazw8o5YrE86_RRFetW49oAVWZ8qyYVD9o9VxeVSdyflgxnldSn6yNQku6A7K2bzsssNoltgGFsBMpj_ixcTSwf0KN2uVcFqPiFJYHKHO-tmKdKafQLzza_RNSY7vJZBAEbOEL6eokRSjKIyBVWNSVnR5pMpovxgkFRM0deK3rPkmNBk5pPSfhQncKJUox5N59mnjwUBiWb7AnWPPqjZM1BQDEGAikzjRiygG3kHeHpcGSuQOfeQL0APOxV5hvJ2SQNK7gsuQ8b3vns20X5R4tMNPeV7dKynN61K-K_Dd8X63MLNK23KIRyEoRhHgVi35HLMfkUDyQVv10zz8BKd2RZagCinbbKzDOm4Dts--N9VT9Dsde49RF_dFBET6bmCwhN9quTk-clWW0CPTfwjb3Cs6vX8vECNILTL319ScD0xYIgtBm6ze6vMk1Ye1MVldAXGwhqssf239v26Jm7T543TQSCryQ61NB0actWE5nC9Zri25jrn-LUcTCpbqGbt5CV6AqTKdmfYarewllBnSxQ6B5woXSDJD4yQ5jDeoIluuVo", "expires_in": 28800, "refresh_token": "CfDJ8JtKk-1PCB5Ou-vbQT5lzoSdbzD2Kz61jZapj88X12BiuIEaM6XSeSZ6mUCG5-EPLCdrbEmpOZnRacQfKjObZn5aAuzTmy2-ILwRG53ypWDIJ9kxkrf1BKnpHXA53CLZz98HqYaQDXh5HCkb0TbjByYMHfilNwtQaYJIqfFGCTIN6PnwdvUmeRdZKoY5XgnqcEgQDBSbZ3Yg0yZjKDRMXY16sxe9HZ85j_mJ2yDp-avk2RvX3v9_7X98YmKhewrSs0Nb_d7YOJyEQsjsngsZbZoyqfKEBhJPWPiSistbGupmufiP8LddnBGvNt0waQ5Zi9WUyl5cl4Ex2McufqU7ky5EBKRL5j_ykIVPj9wswiMD56aTsGh4HZofKILB77X9HHKEGw8xzRDqXUZVfEQokajI9V4bj9iuvsTkMdiuAzWUNDQZkm_oGW4V21Z9y7QvaJFWxG3ZFkEKj6MtPVZRIKT_oV3AIR0XgA-v1zc2CEGusCwPsTFBlH5UwcToWPDSY_BHJCOXeIOzNdQE4-zBxaA8sr5tONhvXF5axxPcYPv73qKnzDxy6WK8Y5lqSUHtqPUEVfgdwCW2Pjh9jiYEghsvfI12NemBZ7zgzthATZs5MGhj5i0kNIYaLYkAog2RPaSoIKLtiLdpQFLQzZz512vtuvZ-KGa5Dw6hBV-HH6NirGOyfpLiBDaVwOcb4IqPB6Ce_7zP9PhCGH0LXSEUqCCgZA71IeUv4-bwNrvPj2lU06JJuVHW_D_Kod9GxiM-EhTEXviBki4WLYytneYZBTAvkoFrTf2qcxVVUVqVi2MSDUC2iCCa14rRsMRKfuZaSFwAgfJGTcDG3baCeb_fQmnjyEPmatVVKcqyM7qg7_bFixh6V8vIWaz0t6fJ4X5Aw" }
```

Sharing Projects with Customers

Share Project

With this user access token the Partner can share the project with them.

```
POST /api/v1/Projects/200/Users HTTP/1.1  
Accept-Language: en-US  
Authorization: Bearer  
CfDJ8JtKk-1PCB5Ou-vbQT5lzoS1EAwLdRo5VShf1ci-9rudJdGSWLybStF5QDuzZhig2XR5CarA25EiPxJ1trjwOenXxkZRHmZMNS_HqLA-OV68j6Ju-q640G0sO37zswjI7O8KAJqt6TR
```


mzosboKRyHh45qzOjnGKgLEHcOEWWazw8o5YrE86_RRFEtW49oAVWZ8qyYVD9o9VxeVSdyf1
gxnldSn6yNQku6A7K2bzsssNo1tgGFsBMpj_ixcTSwf0KN2uVcFqPiFJYHKHO-tmKdKafQLz
za_RNSY7vJZBAEbOEL6eokRSjKIyBVWnsVnR5pMpovxgkFRM0deK3rPkmNBk5pPsfhQncKJU
ox5N59mnjwUBiWb7AnWPpqjZM1BQDEGAikzjRiygG3kHeHpcGSuQOfeQL0APOxV5hvJ2SQNK
7gsuQ8b3vns20X5R4tMNPev7dKynN61K-K_Dd8X63MLNK23KIRyEoRhHgVi35HLMfkUDyQVv
10zz8BKd2RZagCinbbKzDOm4Dts--N9VT9Dsde49RF_dFBET6bmCwhN9quTk-clWW0CPTfWj
b3Cs6vX8vECNILTL319ScD0xYIgtbM6ze6vMk1Ye1MVldAXGwhqssf239v26Jm7T543TQSCr
yQ61NB0actWE5nC9Zri25jrn-LUcTCpbqGbt5CV6AqTKdmfYArewllBnSxQ6B5woXSDJD4yQ
5jDEoIluuVo

Connection: close
Content-Type: application/json
Host: localhost
User-Agent: Toxic/2.0.11 ()
Content-Length: 843

```
{
  "template": {
    "data": [
      {
        "name": "UserId",
        "Value": 102090
      },
      {
        "name": "FirstName",
        "Value": "FirstName"
      },
      {
        "name": "LastName",
        "Value": "LastName"
      },
      {
        "name": "Phone",
        "Value": "1231231235"
      },
      {
        "name": "StateId",
        "Value": 4
      },
      {
        "name": "TradeSelections",
        "Array": []
      },
      {
        "name": "PostalCode",
        "Value": 85034
      },
      {
        "name": "CompanyName",
        "Value": "Partner"
      }
    ]
  }
}
```

```

    {
      "name": "Email",
      "Value": "someemail@invalid.com"
    },
    {
      "name": "CompanyId",
      "Value": 107897
    },
    {
      "name": "Quantity",
      "Value": 0
    }
  ],
  "version": "1.0"
}

```

Response contains the "Project Direct Link" that the customer can be redirected to to access the project.

```

HTTP/1.1 200 OK
Connection: close
Date: Tue, 05 Feb 2019 19:54:31 GMT
Content-Type: application/json; charset=utf-8
Server: Kestrel
Cache-Control: no-cache
Pragma: no-cache
Transfer-Encoding: chunked
Expires: -1
X-Server: webapi/1.0.0.20190205151352

```

```

{"collection":{"error":{},"links":[{"rel":"template","href":"http://localhost/api/Users/Template"}],"items":[{"data":[{"name":"UserId","prompt":"User Id","value":102090},{ "name":"FirstName","prompt":"First Name","value":"FirstName"}, {"name":"LastName","prompt":"Last Name","value":"LastName"}, {"name":"Phone","prompt":"Phone","value":"1231231235"}, {"name":"StateId","prompt":"State Id","value":4}, {"name":"TradeSelections","prompt":"Trade Selections","array":[]}, {"name":"PostalCode","prompt":"Postal Code","value":"85034"}, {"name":"CompanyName","prompt":"Company Name","value":"Partner"}, {"name":"Email","prompt":"Email","value":"someemail@invalid.com"}, {"name":"CompanyId","prompt":"Company Id","value":107897}, {"name":"Source","prompt":"Source"}, {"name":"NumTrials","prompt":"Num Trials","value":0}, {"name":"UserLevelId","prompt":"User Level Id","value":0}, {"name":"Track","prompt":"Track","value":false}, {"name":"StateName","prompt":"State Name"}, {"name":"Subscription","prompt":"Subscription"}, {"name":"LastTrialStarted","prompt":"Last Trial

```

```
Started"}, {"name": "RemoteCreatedAt", "prompt": "Remote Created
At"}, {"name": "ProjectDirectLink", "prompt": "Project Direct
Link", "value": "localhost:5000/BuildersExchange/Index?takeoffId=158"}, {"n
ame": "LockedOut", "prompt": "Locked
Out", "value": false}, {"name": "ArchiveDataDate", "prompt": "Archive Data
Date"}, {"name": "NumSessions", "prompt": "Num
Sessions", "value": 0}, {"name": "PartnerSource", "prompt": "Partner
Source"}, {"name": "SalesRepId", "prompt": "Sales Rep
Id", "value": 0}, {"name": "SalesRepName", "prompt": "Sales Rep
Name"}, {"name": "SupportRepId", "prompt": "Support Rep
Id", "value": 0}, {"name": "SupportRepName", "prompt": "Support Rep
Name"}, {"name": "IsDefaultCompanyName", "prompt": "Is Default Company
Name", "value": false}, {"name": "Quantity", "prompt": "Quantity", "value": 0}, {"
"name": "Pending", "prompt": "Pending", "value": false}], "links": [], "href": "h
ttp://localhost/api/Users/102090"}, {"query": [], "template": {"data": [{"nam
e": "UserId", "prompt": "User
Id", "type": "Value"}, {"name": "FirstName", "prompt": "First
Name", "type": "Value"}, {"name": "LastName", "prompt": "Last
Name", "type": "Value"}, {"name": "Phone", "prompt": "Phone", "type": "Value"}, {"
name": "StateId", "prompt": "State
Id", "type": "Value"}, {"name": "TradeSelections", "prompt": "Trade
Selections", "type": "Array"}, {"name": "PostalCode", "prompt": "Postal
Code", "type": "Value"}, {"name": "CompanyName", "prompt": "Company
Name", "type": "Value"}, {"name": "Email", "prompt": "Email", "type": "Value"}, {"
name": "CompanyId", "prompt": "Company
Id", "type": "Value"}, {"name": "Quantity", "prompt": "Quantity", "type": "Value
"}]}], "version": "1.0", "href": "http://localhost/api/v1/Projects/200/Users"
}}
```

Share second project with the same user.

```
POST /api/v1/Projects/201/Users HTTP/1.1
Accept-Language: en-US
Authorization: Bearer
CfDJ8JtKk-1PCB5Ou-vbQT5lzoS1EAwLdRo5VShf1ci-9rudJdGSWLyybStF5QDuzZhig2XR
5CarA25EiPxJ1trjwOenXxkZRHMZMNS_HqLA-OV68j6Ju-q640G0sO37zsWjI7O8KAJqt6TR
mzosboKRYHh45qzOjngKgLEHcOEWWazw8o5YrE86_RRFetW49oAVWZ8qyYVD9o9VxeVSdyf1
gxnldSn6yNQku6A7K2bzsssNo1tgGFsBMpj_ixcTSwf0KN2uVcFqPiFJYHKHO-tmKdKafQLz
za_RNSY7vJZBAEbOEL6eokRSjKIyBVWNsVnR5pMpovxgkFRM0deK3rPkmNBk5pPSfhQncKJU
ox5N59mnjwUBiWb7AnWPpqjZM1BQDEGAikzjRiygG3kHeHpcGSuQOfeQL0APOxV5hvJ2SQNK
7gsuQ8b3vns20X5R4tMNPeV7dKynN61K-K_Dd8X63MLNK23KIRyEoRhhgVi35HLMfkUDyQVv
l0zz8BKd2RZagCinbbKzD0m4Dts--N9VT9Dsde49RF_dFBET6bmCwhN9quTk-clWW0CPTfwj
b3Cs6vX8vECNILTL319ScD0xYIgtbM6ze6vMk1Ye1MvldAXGwhqssf239v26Jm7T543TQSCr
yQ61NB0actWE5nC9ZRi25jrn-LUCtCpbqGbt5CV6AqTKdmfYArewllBnSxQ6B5woXSDJD4yQ
5jDEoIluuVo
Connection: close
Content-Type: application/json
Host: localhost
User-Agent: Toxic/2.0.11 ()
Content-Length: 843
```

```
{
  "template": {
    "data": [
      {
        "name": "UserId",
        "Value": 102090
      },
      {
        "name": "FirstName",
        "Value": "FirstName"
      },
      {
        "name": "LastName",
        "Value": "LastName"
      },
      {
        "name": "Phone",
        "Value": "1231231235"
      },
      {
        "name": "StateId",
        "Value": 4
      },
      {
        "name": "TradeSelections",
        "Array": []
      },
      {
        "name": "PostalCode",
        "Value": 85034
      },
      {
        "name": "CompanyName",
        "Value": "Partner"
      },
      {
        "name": "Email",
        "Value": "someemail@invalid.com"
      },
      {
        "name": "CompanyId",
        "Value": 107897
      },
      {
        "name": "Quantity",
        "Value": 0
      }
    ],
    "version": "1.0"
  }
}
```

```
}  
}
```

```
HTTP/1.1 200 OK  
Connection: close  
Date: Tue, 05 Feb 2019 19:54:31 GMT  
Content-Type: application/json; charset=utf-8  
Server: Kestrel  
Cache-Control: no-cache  
Pragma: no-cache  
Transfer-Encoding: chunked  
Expires: -1  
X-Server: webapi/1.0.0.20190205151352
```

```
{  
  "collection": {  
    "error": {},  
    "links": [ { "rel": "template", "href": "http://localhost/api/Users/Template" } ],  
    "items": [ {  
      "data": [ {  
        "name": "UserId", "prompt": "User Id", "value": 102090 }, {  
          "name": "FirstName", "prompt": "First Name", "value": "FirstName" }, {  
            "name": "LastName", "prompt": "Last Name", "value": "LastName" }, {  
              "name": "Phone", "prompt": "Phone", "value": "1231231235" }, {  
                "name": "StateId", "prompt": "State Id", "value": 4 }, {  
                  "name": "TradeSelections", "prompt": "Trade Selections", "array": [ ] }, {  
                    "name": "PostalCode", "prompt": "Postal Code", "value": "85034" }, {  
                      "name": "CompanyName", "prompt": "Company Name", "value": "Partner" }, {  
                        "name": "Email", "prompt": "Email", "value": "someemail@invalid.com" }, {  
                          "name": "CompanyId", "prompt": "Company Id", "value": 107897 }, {  
                            "name": "Source", "prompt": "Source" }, {  
                              "name": "NumTrials", "prompt": "Num Trials", "value": 0 }, {  
                                "name": "UserLevelId", "prompt": "User Level Id", "value": 0 }, {  
                                  "name": "Track", "prompt": "Track", "value": false }, {  
                                    "name": "StateName", "prompt": "State Name" }, {  
                                      "name": "Subscription", "prompt": "Subscription" }, {  
                                        "name": "LastTrialStarted", "prompt": "Last Trial Started" }, {  
                                          "name": "RemoteCreatedAt", "prompt": "Remote Created At" }, {  
                                            "name": "ProjectDirectLink", "prompt": "Project Direct Link", "value": "localhost:5000/BuildersExchange/Index?takeoffId=159" }, {  
                                              "name": "LockedOut", "prompt": "Locked Out", "value": false }, {  
                                                "name": "ArchiveDataDate", "prompt": "Archive Data Date" }, {  
                                                  "name": "NumSessions", "prompt": "Num Sessions", "value": 0 }, {  
                                                    "name": "PartnerSource", "prompt": "Partner Source" }, {  
                                                      "name": "SalesRepId", "prompt": "Sales Rep Id", "value": 0 }, {  
                                                        "name": "SalesRepName", "prompt": "Sales Rep Name" }, {  
                                                          "name": "SupportRepId", "prompt": "Support Rep Id", "value": 0 }, {  
                                                            "name": "SupportRepName", "prompt": "Support Rep Name" }, {  
                                                              "name": "IsDefaultCompanyName", "prompt": "Is Default Company Name", "value": false }, {  
                                                                "name": "Quantity", "prompt": "Quantity", "value": 0 }, {  
                                                                  "name": "Pending", "prompt": "Pending", "value": false } ],  
                      "links": [ ],  
                      "href": "http://localhost/api/Users/102090" } ],  
    "query": [ ],  
    "template": {  
      "data": [ {  
        "name": "UserId", "prompt": "User Id", "type": "Value" }, {  
          "name": "FirstName", "prompt": "First
```

```
Name", "type": "Value" }, { "name": "LastName", "prompt": "Last
Name", "type": "Value" }, { "name": "Phone", "prompt": "Phone", "type": "Value" }, {
"name": "StateId", "prompt": "State
Id", "type": "Value" }, { "name": "TradeSelections", "prompt": "Trade
Selections", "type": "Array" }, { "name": "PostalCode", "prompt": "Postal
Code", "type": "Value" }, { "name": "CompanyName", "prompt": "Company
Name", "type": "Value" }, { "name": "Email", "prompt": "Email", "type": "Value" }, {
"name": "CompanyId", "prompt": "Company
Id", "type": "Value" }, { "name": "Quantity", "prompt": "Quantity", "type": "Value
"} ] ] }, "version": "1.0", "href": "http://localhost/api/v1/Projects/201/Users"
} }
```

Project Retrieval

Get a list of all the created projects. Note use of partner access token since only the partner owns the projects. The share to the customer does not change ownership.

```
GET /api/v1/Projects HTTP/1.1
Accept-Language: en-US
Authorization: Bearer
CfdJ8JtKk-1PCB5Ou-vbQT5lzoSLSYB0FK9EOfYU93RrR4B9UYuM9pstSF3uOLpMjSlff0WA
INkXkPSI1FxEQrIDhYW926h8kdu7Gfqdw2NgK02Wj-U2Bu2YYDSXi9bLTfBGsq6HQ44t-MKi
_MEEU8xvJYWj3W5Q0ggwlZ9L0sth5MLMuBmbgP2PJ56-qT3U6cPeo49TUESz7fJkVbttbUrX
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KXuivrExXB0
Connection: close
Content-Type: application/json
Host: localhost
User-Agent: Toxic/2.0.11 ()
Content-Length: 0

HTTP/1.1 200 OK
Connection: close
Date: Tue, 05 Feb 2019 19:54:31 GMT
Content-Type: application/json; charset=utf-8
Server: Kestrel
Cache-Control: no-cache
Pragma: no-cache
Transfer-Encoding: chunked
Expires: -1
X-Server: webapi/1.0.0.20190205151352
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```




Appendix - Constants

Measurement Type IDs

| MeasurementTypeId | Name |
|-------------------|------------------|
| 1 | Area |
| 2 | Linear |
| 3 | Count |
| 4 | Linear with Drop |
| 5 | Pitched Area |
| 6 | Pitched Linear |
| 7 | Surface Area |
| 8 | Volume 2D |
| 9 | Volume 3D |

Creation Statuses

| CreationStatus | Name |
|----------------|-------------|
| 0 | Created |
| 1 | AddingPages |
| 2 | Generating |
| 3 | Complete |
| 4 | Error |

Country Ids

| Country Id | Country Name |
|------------|--------------|
| 236 | USA |
| 41 | Canada |

State Ids

| State Id | State Name |
|----------|------------|
| 1 | Alabama |
| 2 | Alaska |

| | |
|----|----------------|
| 4 | Arizona |
| 5 | Arkansas |
| 6 | California |
| 7 | Colorado |
| 8 | Connecticut |
| 9 | Delaware |
| 12 | Florida |
| 13 | Georgia |
| 15 | Hawaii |
| 16 | Idaho |
| 17 | Illinois |
| 18 | Indiana |
| 19 | Iowa |
| 20 | Kansas |
| 21 | Kentucky |
| 22 | Louisiana |
| 23 | Maine |
| 25 | Maryland |
| 26 | Massachusetts |
| 27 | Michigan |
| 28 | Minnesota |
| 29 | Mississippi |
| 30 | Missouri |
| 31 | Montana |
| 32 | Nebraska |
| 33 | Nevada |
| 34 | New Hampshire |
| 35 | New Jersey |
| 36 | New Mexico |
| 37 | New York |
| 38 | North Carolina |
| 39 | North Dakota |
| 41 | Ohio |
| 42 | Oklahoma |
| 43 | Oregon |
| 45 | Pennsylvania |
| 47 | Rhode Island |

| | |
|----|---------------------------|
| 48 | South Carolina |
| 49 | South Dakota |
| 50 | Tennessee |
| 51 | Texas |
| 52 | Utah |
| 53 | Vermont |
| 54 | Virginia |
| 55 | Virgin Islands |
| 56 | Washington |
| 57 | West Virginia |
| 58 | Wisconsin |
| 59 | Wyoming |
| 60 | Not USA or Canada |
| 62 | American Samoa |
| 63 | District of Columbia |
| 64 | Guam |
| 65 | Northern Mariana Islands |
| 66 | Puerto Rico |
| 67 | US Virgin Islands |
| 68 | US Minor Outlying Islands |
| 69 | Alberta |
| 70 | British Columbia |
| 71 | Manitoba |
| 72 | New Brunswick |
| 73 | Newfoundland and Labrador |
| 74 | Nova Scotia |
| 75 | Northwest Territories |
| 76 | Nunavut |
| 77 | Ontario |
| 78 | Prince Edward Island |
| 79 | Quebec |
| 80 | Saskatchewan |
| 81 | Yukon |