



Web Services

**Application Programming
Interface (API) Specification**

Version 1.3

Jan 3, 2019

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1. Terrain Sources

Provides a list data sources available to the Terrain Services. Each data source is given a unique identifier which is used as in the endpoint URL in the other Terrain Services calls.

Endpoint URL	https://api.intermap.com/api/raster
Authentication	Basic
Methods	GET, POST

1.1. GET Method

URL Parameters	<table border="1"> <thead> <tr> <th>Name</th> <th>Required</th> <th>Description</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>easting northing</td> <td>No</td> <td>Easting and northing coordinates of a point on the earth's surface. When used, only data sources containing the given point are returned, otherwise, all data sources are returned. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).</td> <td>easting=10 northing=50</td> </tr> <tr> <td>crs</td> <td>No</td> <td>Coordinate reference system (CRS) in format EPSG:identifier where identifier is the EPSG code for the given CRS.</td> <td>crs=EPSG:4326</td> </tr> </tbody> </table>	Name	Required	Description	Example	easting northing	No	Easting and northing coordinates of a point on the earth's surface. When used, only data sources containing the given point are returned, otherwise, all data sources are returned. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	easting=10 northing=50	crs	No	Coordinate reference system (CRS) in format EPSG:identifier where identifier is the EPSG code for the given CRS.	crs=EPSG:4326
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Header Parameters													
Content													
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/api/raster?easting=10&northing=50&crs=EPSG:4326</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api.intermap.com/api/raster?easting=10&northing=50&crs=EPSG:4326	Header Parameters		Content							
URL	https://api.intermap.com/api/raster?easting=10&northing=50&crs=EPSG:4326												
Header Parameters													
Content													

1.2. POST Method

URL Parameters							
Header Parameters	Content-Type: application/json						
Content	<p>If the content is empty, all data sources are returned.</p> <p>Request content is in GeoJSON format and contains a FeatureCollection. Each Feature within the FeatureCollection contains Point geometry. Only the data sources that contain at least one of the points are returned.</p> <p>The FeatureCollection may also contain a crs which is used to identify the Coordinate Reference System of the point coordinates. If no crs is given then WGS84 Geographic decimal degrees (EPSG:4326) is used.</p>						
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/api/raster</td> </tr> <tr> <td>Header Parameters</td> <td>Content-Type: application/json</td> </tr> <tr> <td>Content</td> <td> <pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] } }] }</pre> </td> </tr> </table>	URL	https://api.intermap.com/api/raster	Header Parameters	Content-Type: application/json	Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] } }] }</pre>
URL	https://api.intermap.com/api/raster						
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Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] } }] }</pre>						

1.3. Success Responses

Code	200
Description	Success – Response contains terrain sources content
Content Type	application/json
Content Description	The contents are returned as a GeoJSON FeatureCollection where each Feature in the FeatureCollection contains an “id” element which is the ID to use in other Terrain Services calls. Each Feature also contains a polygon geometry defining the bounds of the data source and some other properties.
Content Example	<pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "id": "NEXTMap-Europe_DTM", </pre>

```
"geometry": {
  "type": "Polygon",
  "coordinates": [
    [
      [
        -10.751979166666665,
        35.370687500000004
      ],
      [
        -10.751979166666665,
        60.88535416675661
      ],
      [
        19.008020833333536,
        60.88535416675661
      ],
      [
        19.008020833333536,
        35.370687500000004
      ],
      [
        -10.751979166666665,
        35.370687500000004
      ]
    ]
  ]
},
"properties": {
  "name": "NEXTMap-Europe_DTM",
  "remarks": null,
  "summary": "DTM - NEXTMap®Europe",
  "version": "3.3"
}
},
{
  "type": "Feature",
  "id": "NEXTMap-Europe_DSM",
  "geometry": {
    "type": "Polygon",
    "coordinates": [
      [
        [
          -10.751979166666665,
          35.370687500000004
        ],
        [
          -10.751979166666665,
          60.88535416675661
        ],
        [
          19.008020833333536,
          60.88535416675661
        ],
        [
          19.008020833333536,
          35.370687500000004
        ]
      ]
    ]
  ]
}
```

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        [
          -10.751979166666665,
          35.370687500000004
        ]
      ]
    },
    "properties": {
      "name": "NEXTMap-Europe_DSM",
      "remarks": null,
      "summary": "DSM - NEXTMap®Europe",
      "version": "3.3"
    }
  },
  {
    "type": "Feature",
    "id": "NEXTMap-World30_DEM",
    "geometry": {
      "type": "Polygon",
      "coordinates": [
        [
          [
            -179.99990000000003,
            -89.9999
          ],
          [
            -179.99990000000003,
            84.05347222212286
          ],
          [
            179.99990000000003,
            84.05347222212286
          ],
          [
            179.99990000000003,
            -89.9999
          ],
          [
            -179.99990000000003,
            -89.9999
          ]
        ]
      ]
    },
    "properties": {
      "name": "NEXTMap-World30_DEM",
      "remarks": null,
      "summary": "DEM30-NEXTMap®World30",
      "version": null
    }
  }
]
```

1.4. Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre>

Code	400
Description	Model is not valid. This may be due to specifying the parameters incorrectly.
Content Type	application/xml
Content Example	<pre><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></pre>

2. Terrain Values

Intermap's Values allows the user to quickly get the value (From any raster data set) at any geographic coordinate (assuming it is in the data set). This is very useful for analyzing data at specific locations. Intermap's values tool allows a list (batch) of points to be specified for running batch analysis. Examples include: getting the elevation height, risk information, flood depth, slope, etc.

Gets the values (elevations) of a set of points on a terrain data source.

Endpoint URL	https://api.intermap.com/api/raster/<Source ID>/values Where <Source ID> is a data source ID returned from a Terrain Sources call
Authentication	Basic
Methods	GET, POST

2.1. GET Method

URL Parameters	<table border="1"> <thead> <tr> <th>Name</th> <th>Required</th> <th>Description</th> <th>Example</th> </tr> </thead> <tbody> <tr> <td>easting northing</td> <td>Yes</td> <td>Easting and northing coordinates of a point for which to get the value for. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).</td> <td>easting=10 northing=50</td> </tr> <tr> <td>crs</td> <td>No</td> <td>Coordinate reference system (CRS) in format EPSG:identifier where identifier is the EPSG code for the given CRS.</td> <td>crs=EPSG:4326</td> </tr> </tbody> </table>	Name	Required	Description	Example	easting northing	Yes	Easting and northing coordinates of a point for which to get the value for. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	easting=10 northing=50	crs	No	Coordinate reference system (CRS) in format EPSG:identifier where identifier is the EPSG code for the given CRS.	crs=EPSG:4326
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Header Parameters													
Content													
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/api/raster/NEXTMap-USA_DSM/values?easting=-105&northing=40&crs=EPSG:4326</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> </table>	URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/values?easting=-105&northing=40&crs=EPSG:4326	Header Parameters									
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Header Parameters													

	Content	
--	----------------	--

2.2. POST Method

URL Parameters							
Header Parameters	Content-Type: application/json						
Content	<p>Request content is in GeoJSON format and contains a FeatureCollection. Each Feature within the FeatureCollection contains Point geometry. The values (elevations) for all given points is returned.</p> <p>The FeatureCollection may also contain a crs which is used to identify the Coordinate Reference System of the point coordinates. If no crs is given then WGS84 Geographic decimal degrees (EPSG:4326) is used.</p>						
Example Request	<table border="1" style="width: 100%;"> <tr> <td style="width: 15%;">URL</td> <td>https://api.intermap.com/api/raster/NEXMap-USA_DSM/values</td> </tr> <tr> <td>Header Parameters</td> <td>Content-Type: application/json</td> </tr> <tr> <td>Content</td> <td> <pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] } }] }</pre> </td> </tr> </table>	URL	https://api.intermap.com/api/raster/NEXMap-USA_DSM/values	Header Parameters	Content-Type: application/json	Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] } }] }</pre>
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2.3. Success Responses

Code	200
Description	Success – Response contains requested values
Content Type	application/json
Content Description	The contents are returned as a GeoJSON FeatureCollection where each Feature in the FeatureCollection contains a point geometry matching the requested points and a “value” property containing the value from the data source at that point.
Content Example	<pre>{ "type": "FeatureCollection", "features": [</pre>

	<pre> { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "value": 1589.68359 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [10, 50] }, "properties": { "value": -10000 } }] </pre>
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Code	202
Description	Accepted – Processing will take a long time so an asynchronous job has been created
Header Parameters	Location – Contains a URL which is used in a GET call to get the status and result URL for the job (see Asynchronous Processing)
Content Type	application/json
Content Description	The contents simply contain the word null because the desired URL is in the header rather than the contents
Content Example	null

2.4. Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content- </pre>

```

container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head>
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</div> </body> </html>

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Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>

2.5. Asynchronous Processing

When a task will take a long time, it will be sent off for asynchronous processing rather than making the caller wait for a response. In this case, a response with a code of 202 is returned. This response contains a Location header parameter which is a URL for obtaining the status and when complete, the result.

2.6. Asynchronous Status

The asynchronous status is a GET method that allows the user to check the status of the asynchronous job, and when complete, it gives the URL for the result. It uses the same basic authentication as the other methods.

URL Parameters	None						
Header Parameters	None						
Content	None						
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status	Header Parameters		Content	
URL	https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status						
Header Parameters							
Content							
Success Responses	<table border="1"> <tr> <td>Code</td> <td>200</td> </tr> <tr> <td>Description</td> <td>Success – Status check is successful, but the job is still processing</td> </tr> <tr> <td>Content Type</td> <td>application/json</td> </tr> </table>	Code	200	Description	Success – Status check is successful, but the job is still processing	Content Type	application/json
Code	200						
Description	Success – Status check is successful, but the job is still processing						
Content Type	application/json						

	<table border="1"> <tr> <td>Content Description</td> <td>The contents are simple JSON with a "location" element echoing back the status URL and a "status" element that gives the current status of the processing.</td> </tr> <tr> <td>Content Example</td> <td>{ "location": "https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }</td> </tr> <tr> <td>Code</td> <td>303</td> </tr> <tr> <td>Description</td> <td>Redirect – Status check is successful and the job is complete</td> </tr> <tr> <td>Header Parameters</td> <td>Location – URL that contains the result of the processing</td> </tr> <tr> <td>Content Type</td> <td>No Content</td> </tr> <tr> <td>Content Description</td> <td>There is no content</td> </tr> <tr> <td>Content Example</td> <td></td> </tr> </table>	Content Description	The contents are simple JSON with a "location" element echoing back the status URL and a "status" element that gives the current status of the processing.	Content Example	{ "location": "https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }	Code	303	Description	Redirect – Status check is successful and the job is complete	Header Parameters	Location – URL that contains the result of the processing	Content Type	No Content	Content Description	There is no content	Content Example	
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Header Parameters	Location – URL that contains the result of the processing																
Content Type	No Content																
Content Description	There is no content																
Content Example																	
<p>Failure Responses</p>	<table border="1"> <tr> <td>Code</td> <td>401 UNAUTHORIZED</td> </tr> <tr> <td>Description</td> <td>Error when the authentication fails possibly due to incorrect login</td> </tr> <tr> <td>Content Type</td> <td>text/xml</td> </tr> <tr> <td>Content Example</td> <td><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></td> </tr> <tr> <td>Code</td> <td>400</td> </tr> <tr> <td>Description</td> <td>Model is not valid. This may be due to specifying the parameters or content incorrectly.</td> </tr> <tr> <td>Content Type</td> <td>application/xml</td> </tr> <tr> <td>Content Example</td> <td><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></td> </tr> </table>	Code	401 UNAUTHORIZED	Description	Error when the authentication fails possibly due to incorrect login	Content Type	text/xml	Content Example	<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html>	Code	400	Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.	Content Type	application/xml	Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>
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2.7. Asynchronous Result

The asynchronous result is a GET method that simply gets back the result from an asynchronous processing job with the URL given in the asynchronous status call.

URL Parameters	None										
Header Parameters	None										
Content	None										
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff	Header Parameters		Content					
URL	https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff										
Header Parameters											
Content											
Success Responses	<table border="1"> <tr> <td>Code</td> <td>200</td> </tr> <tr> <td>Description</td> <td>Success – Result returned</td> </tr> <tr> <td>Content Type</td> <td>application/json</td> </tr> <tr> <td>Content Description</td> <td>The contents are the same as if they were returned without an asynchronous call. They contain a GeoJSON FeatureCollection where each Feature in the FeatureCollection contains a point geometry matching the requested points and a “value” property containing the value from the data source at that point.</td> </tr> <tr> <td>Content Example</td> <td> <pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "value": 1589.68359 } }, { "type": "Feature",</pre> </td> </tr> </table>	Code	200	Description	Success – Result returned	Content Type	application/json	Content Description	The contents are the same as if they were returned without an asynchronous call. They contain a GeoJSON FeatureCollection where each Feature in the FeatureCollection contains a point geometry matching the requested points and a “value” property containing the value from the data source at that point.	Content Example	<pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "value": 1589.68359 } }, { "type": "Feature",</pre>
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```

        "geometry": {
            "type": "Point",
            "coordinates": [
                10,
                50
            ]
        },
        "properties": {
            "value": -10000
        }
    }
}
    ]
}

```

Failure Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font- size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font- size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin- top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content- container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html> </pre>

Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<pre> <string>Model is not valid. This error has been assigned an Incident ID of '66480-API2- TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string> </pre>

3. Terrain Profile

A terrain profile is a set of points along a straight line from one location to another. It is called a profile, since it is typically used on elevation to create an elevation profile or cross section. Intermap's terrain profile allows the user to specify the number of steps (samples) between the start and end points required. Profiles are often plotted as shown in the example below.



Gets a profile between two points on a terrain data source.

Endpoint URL	https://api.intermap.com/api/raster/<Source ID>/profile Where <Source ID> is a data source ID returned from a Terrain Sources call
Authentication	Basic
Methods	GET, POST

3.1. GET Method

URL Parameters	Name	Required	Description	Example
	eastingStart northingStart	Yes	Easting and northing coordinates of the start point for the profile. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then	eastingStart=-105 northingStart=40

	<p>the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).</p>								
eastingEnd northingEnd	Yes	Easting and northing coordinates of the end point for the profile. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	eastingEnd=-105.01 northingEnd=40.01						
step	Yes	The sampling step size along the profile between the start and end points. The value is in meters.	step=100						
crs	No	Coordinate reference system (CRS) for the input coordinates in format EPSG:identifier where identifier is the EPSG code for the given CRS. Default if not specified is EPSG:4326.	crs=EPSG:4326						
Header Parameters									
Content									
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile?eastingStart=-105&northingStart=40&eastingEnd=-105.01&northingEnd=40.01&step=500&crs=EPSG:4326</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>			URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile?eastingStart=-105&northingStart=40&eastingEnd=-105.01&northingEnd=40.01&step=500&crs=EPSG:4326	Header Parameters		Content	
URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile?eastingStart=-105&northingStart=40&eastingEnd=-105.01&northingEnd=40.01&step=500&crs=EPSG:4326								
Header Parameters									
Content									

3.2. POST Method

URL Parameters	
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Header Parameters	Content-Type: application/json						
Content	Request content is in GeoJSON format and contains a FeatureCollection. There are two Features within the FeatureCollection which specify the start and end point of the profile. There is also a “step” property in the FeatureCollection that identifies the sampling step size in meters along the profile between the start and end points. The FeatureCollection may also contain a crs which is used to identify the Coordinate Reference System of the point coordinates. If no crs is given then WGS84 Geographic decimal degrees (EPSG:4326) is used.						
Example Request	<table border="1"> <tr> <td data-bbox="376 640 574 684">URL</td> <td data-bbox="578 640 1500 684">https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile</td> </tr> <tr> <td data-bbox="376 688 574 758">Header Parameters</td> <td data-bbox="578 688 1500 758">Content-Type: application/json</td> </tr> <tr> <td data-bbox="376 762 574 1583">Content</td> <td data-bbox="578 762 1500 1583"> <pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.01, 40.01] } }], "properties": { "step": 500 } }</pre> </td> </tr> </table>	URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile	Header Parameters	Content-Type: application/json	Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.01, 40.01] } }], "properties": { "step": 500 } }</pre>
URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/profile						
Header Parameters	Content-Type: application/json						
Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.01, 40.01] } }], "properties": { "step": 500 } }</pre>						

3.3. Success Responses

Code	200
Description	Success – Response contains requested profile
Content Type	application/json
Content Description	The contents are returned as a GeoJSON FeatureCollection where each Feature in the FeatureCollection is a point along the profile which has the point’s geometry along with a

	<p>“distance” property which gives the distance in meters from the previous point in the profile and a “value” property which is the value (elevation) of the terrain data source at that point.</p>
Content Example	<pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "distance": 0, "value": 1589.68359 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.00356929493735, 40.003569770806926] }, "properties": { "distance": 500, "value": 1601.67566 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.00713896168041, 40.00713938952522] }, "properties": { "distance": 500, "value": 1610.09192 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.01, 40.01] }, "properties": { "distance": 500, "value": 1610.09192 } }] }</pre>

	<pre> "properties": { "distance": 400.70546112401234, "value": 1599.65173 } }] } </pre>
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Code	202
Description	Accepted – Processing will take a long time so an asynchronous job has been created
Header Parameters	Location – Contains a URL which is used in a GET call to get the status and result URL for the job (see Asynchronous Processing)
Content Type	application/json
Content Description	The contents simply contain the word null because the desired URL is in the header rather than the contents
Content Example	null

3.4. Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html> </pre>

Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>

3.5. Asynchronous Processing

When a task will take a long time, it will be sent off for asynchronous processing rather than making the caller wait for a response. In this case, a response with a code of 202 is returned. This response contains a Location header parameter which is a URL for obtaining the status and when complete, the result.

The asynchronous status is a GET method that allows the user to check the status of the asynchronous job, and when complete, it gives the URL for the result. It uses the same basic authentication as the other methods.

URL Parameters	None																
Header Parameters	None																
Content	None																
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status	Header Parameters		Content											
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Code	200																
Description	Success – Status check is successful, but the job is still processing																
Content Type	application/json																
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Description	Redirect – Status check is successful and the job is complete																
Header Parameters	Location – URL that contains the result of the processing																

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Content Description	There is no content																
Content Example																	
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The asynchronous result is a GET method that simply gets back the result from an asynchronous processing job with the URL given in the asynchronous status call.

URL Parameters	None
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Header Parameters	None										
Content	None										
Example Request	<table border="1"> <tr> <td data-bbox="373 474 581 558">URL</td> <td data-bbox="581 474 1500 558">https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff</td> </tr> <tr> <td data-bbox="373 558 581 632">Header Parameters</td> <td data-bbox="581 558 1500 632"></td> </tr> <tr> <td data-bbox="373 632 581 680">Content</td> <td data-bbox="581 632 1500 680"></td> </tr> </table>	URL	https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff	Header Parameters		Content					
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Header Parameters											
Content											
Success Responses	<table border="1"> <tr> <td data-bbox="373 688 561 741">Code</td> <td data-bbox="561 688 1500 741">200</td> </tr> <tr> <td data-bbox="373 741 561 779">Description</td> <td data-bbox="561 741 1500 779">Success – Result returned</td> </tr> <tr> <td data-bbox="373 779 561 852">Content Type</td> <td data-bbox="561 779 1500 852">application/json</td> </tr> <tr> <td data-bbox="373 852 561 1066">Content Description</td> <td data-bbox="561 852 1500 1066">The contents are the same as if they were returned without an asynchronous call. They contain a GeoJSON FeatureCollection where each Feature in the FeatureCollection is a point along the profile which has the point’s geometry along with a “distance” property which gives the distance in meters from the previous point in the profile and a “value” property which is the value (elevation) of the terrain data source at that point.</td> </tr> <tr> <td data-bbox="373 1066 561 1892">Content Example</td> <td data-bbox="561 1066 1500 1892"> <pre> { "type": "FeatureCollection", "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "distance": 0, "value": 1589.68359 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.00356929493735, 40.003569770806926] }, "properties": { "distance": 500, </pre> </td> </tr> </table>	Code	200	Description	Success – Result returned	Content Type	application/json	Content Description	The contents are the same as if they were returned without an asynchronous call. They contain a GeoJSON FeatureCollection where each Feature in the FeatureCollection is a point along the profile which has the point’s geometry along with a “distance” property which gives the distance in meters from the previous point in the profile and a “value” property which is the value (elevation) of the terrain data source at that point.	Content Example	<pre> { "type": "FeatureCollection", "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "distance": 0, "value": 1589.68359 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.00356929493735, 40.003569770806926] }, "properties": { "distance": 500, </pre>
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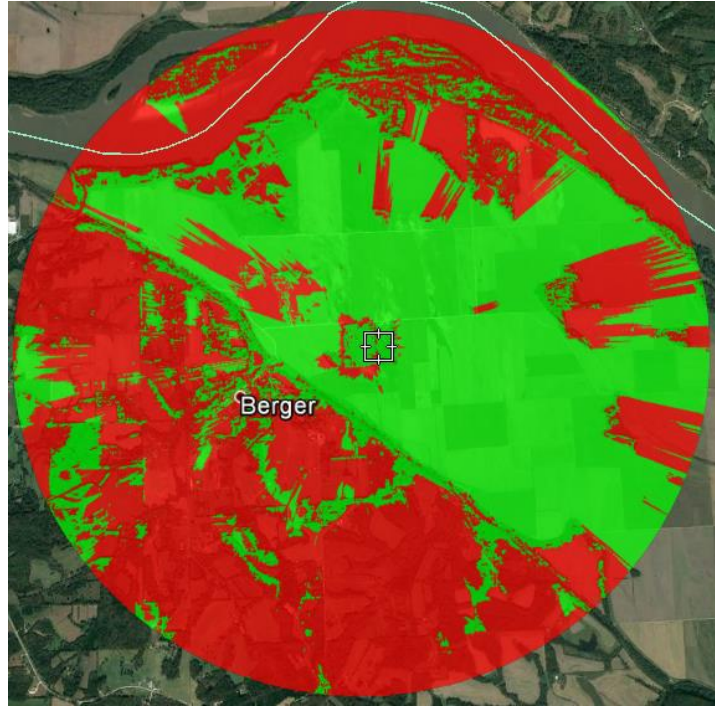
	<pre> "value": 1601.67566 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.00713896168041, 40.00713938952522] }, "properties": { "distance": 500, "value": 1610.09192 } }, { "type": "Feature", "geometry": { "type": "Point", "coordinates": [-105.01, 40.01] }, "properties": { "distance": 400.70546112401234, "value": 1599.65173 } }] } </pre>
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Failure Responses	Code	401 UNAUTHORIZED
	Description	Error when the authentication fails possibly due to incorrect login
	Content Type	text/xml
	Content Example	<pre> <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font- size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font- size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin- top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content- container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html> </pre>

	<table border="1"><tr><td data-bbox="376 296 561 331">Code</td><td data-bbox="565 296 1485 331">400</td></tr><tr><td data-bbox="376 336 561 371">Description</td><td data-bbox="565 336 1485 371">Model is not valid. This may be due to specifying the parameters or content incorrectly.</td></tr><tr><td data-bbox="376 375 561 478">Content Type</td><td data-bbox="565 375 1485 478">application/xml</td></tr><tr><td data-bbox="376 483 561 606">Content Example</td><td data-bbox="565 483 1485 606"><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></td></tr></table>	Code	400	Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.	Content Type	application/xml	Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>
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4. Terrain Viewshed

A viewshed is an area that is visible from a specific location. Viewshed analyses are a common function of most geographic information system (GIS) software. The analysis uses the elevation value of each cell of the digital elevation model (DEM) to determine visibility to or from a particular cell. The location of this particular cell varies depending on the needs of the analysis. A viewshed is created from a DEM by using an algorithm that estimates the difference of elevation from one cell (the viewpoint cell) to the next (the target cell). To determine the visibility of a target cell, each cell between the viewpoint cell and target cell is examined for line of sight. Where cells of higher value are between the viewpoint and target cells the line of sight is blocked. If the line of sight is blocked then the target cell is determined to not be part of the viewshed.



Intermap's viewshed can be configured with a variety of variables. For example, if the analysis is to determine the location of a radio tower, the height of the tower (viewpoint cell) could be added to the elevation of that location (cell value). If no height is given, then the viewshed analysis uses the cell value of the DEM in which the tower is located. Similarly, the receiver cell (Target cell) can have a height associate with it. The viewshed analysis can also have a limited viewing angle: The first value is the lowest possible azimuth angle and the second value is the highest possible azimuth angle. Intermap's viewshed also allows the radius to be adjusted to limit the range (and run time) of the calculation.

Gets a viewshed from a given location.

Endpoint URL	<a href="https://api.intermap.com/api/raster/<Source ID>/viewshed">https://api.intermap.com/api/raster/<Source ID>/viewshed Where <Source ID> is a data source ID returned from a Terrain Sources call
Authentication	Basic
Methods	GET, POST

4.1. GET Method

URL Parameters	Name	Required	Description	Example
	easting northing	Yes	Easting and northing coordinates of the center point (source) of the viewshed. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	easting=-105 northing=40
	radius	Yes	Radius of the viewshed from the center point in meters	radius=500
	center Height	No	The height of the center point in meters above the terrain (default = 0)	centerHeight=0.5
	fieldHe ight	No	The height of values in the field above the terrain. (default = 0)	fieldHeight=0.3
	azimut hStart	No	The starting azimuth in degrees of the resulting viewshed field. (default = 0)	azimuthStart=10
	azimut hEnd	No	The ending azimuth in degrees of the resulting viewshed field. (default = 360)	azimuthStart=350
	crs	No	Coordinate reference system (CRS) for the input coordinates in format EPSG:identifier where identifier is the EPSG code for the given CRS.	crs=EPSG:4326
Header Parameters				
Content				
Example Request	URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed?easting=-105&northing=40&radius=100&centerHeight=0.5&fieldHeight=0.3&azimuthStart=10&azimuthEnd=350&crs=EPSG:4326		
	Header Parameters			
	Content			

4.2. POST Method

URL Parameters							
Header Parameters	Content-Type: application/json						
Content	<p>Request content is in GeoJSON format and contains a Point Feature whose geometry specifies the coordinate of the center point for the viewshed. There are also the following properties in the Feature:</p> <ul style="list-style-type: none"> • radius – radius of the viewshed from the center point in meters (required) • centerHeight – height of the center point in meters above the terrain (optional : default = 0) • fieldHeight – height of the values in the field above the terrain (optional : default = 0) • azimuthStart – starting azimuth in degrees of the resulting viewshed field (optional : default = 0) • azimuthEnd – ending azimuth in degrees of the resulting viewshed field (optional : default = 360) <p>The Feature may also contain a crs which is used to identify the Coordinate Reference System of the point coordinates. If no crs is given then WGS84 Geographic decimal degrees (EPSG:4326) is used.</p>						
Example Request	<table border="1"> <tr> <td data-bbox="386 1220 578 1255">URL</td> <td data-bbox="578 1220 1484 1255">https://api.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed</td> </tr> <tr> <td data-bbox="386 1255 578 1329">Header Parameters</td> <td data-bbox="578 1255 1484 1329">Content-Type: application/json</td> </tr> <tr> <td data-bbox="386 1329 578 1881">Content</td> <td data-bbox="578 1329 1484 1881"> <pre>{ "type": "Feature", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "azimuthStart": 10, "azimuthEnd": 350, "centerHeight": 0.5, "fieldHeight": 0.3, "radius": 500 } }</pre> </td> </tr> </table>	URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed	Header Parameters	Content-Type: application/json	Content	<pre>{ "type": "Feature", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "geometry": { "type": "Point", "coordinates": [-105, 40] }, "properties": { "azimuthStart": 10, "azimuthEnd": 350, "centerHeight": 0.5, "fieldHeight": 0.3, "radius": 500 } }</pre>
URL	https://api.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed						
Header Parameters	Content-Type: application/json						
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	}
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4.3. Success Responses

Code	200
Description	Success – Response contains results
Content Type	application/json
Content Description	<p>The contents are returned as a GeoJSON Polygon Feature with the geometry defining the bounding box of the result. It also contains the following properties:</p> <ul style="list-style-type: none"> • visibility – The visible area of the viewshed in percent • visibleArea – The visible area of the viewshed in square meters • invisibleArea – The invisible area of the viewshed in square meters • resultUrl – Url which is used in a follow-up Viewshed Result query
Content Example	<pre>{ "type": "Feature", "geometry": { "type": "Polygon", "coordinates": [[[-105.00585416666672, 39.99547916666667], [-105.00585416666672, 40.004520833333333], [-104.994145833333332, 40.004520833333333], [-104.99414583333332, 39.99547916666667], [-105.00585416666672, 39.99547916666667]]] }, "properties": { "invisibleArea": 889631.41, "resultUrl": "https://api-test.intermap.com/api/raster/NEXtMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result", "visibility": 10.76, "visibleArea": 107264.94 } }</pre>

Code	202
Description	Accepted – Processing will take a long time so an asynchronous job has been created
Header Parameters	Location – Contains a URL which is used in a GET call to get the status and result URL for the job (see Asynchronous Processing)
Content Type	application/json
Content Description	The contents simply contain the word null because the desired URL is in the header rather than the contents
Content Example	null

4.4. Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre>

Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<pre><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></pre>

4.5. Viewshed Result – GET Method

Endpoint URL is extracted from the resultUrl property in the result from the Viewshed GET or POST method. It uses the same basic authentication.

URL Parameters	
-----------------------	--

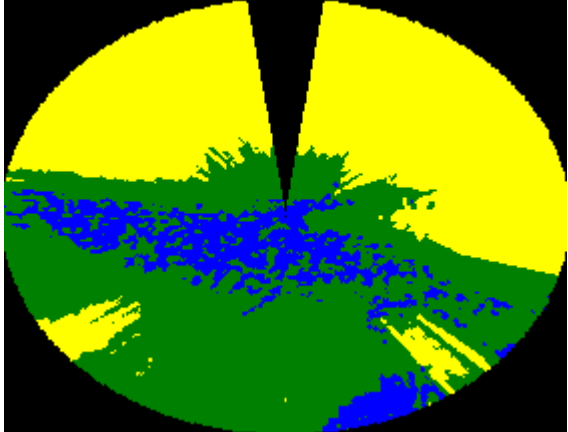
Header Parameters	Accept: application/vnd.google.earth.kmz or Accept: image/png Or Accept: image/jpeg						
Content							
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api-test.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result</td> </tr> <tr> <td>Header Parameters</td> <td>Accept: image/png</td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api-test.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result	Header Parameters	Accept: image/png	Content	
URL	https://api-test.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result						
Header Parameters	Accept: image/png						
Content							

4.6. Viewshed Result – POST Method

URL Parameters	
Header Parameters	Content-Type: application/json Accept: application/vnd.google.earth.kmz or Accept: image/png Or Accept: image/jpeg
Content	<p>The content is used to specify how the resulting viewshed appears. The content may be empty to use the default visualization options.</p> <p>The content is simple JSON with the following elements:</p> <ul style="list-style-type: none"> • colorVisible – color of the visible area (default = Lime) • colorInvisible – color of the invisible area (default = Red) • colorNoData – color of areas with no data (null areas) (default = rgb(0,0,128,1)) • colorShadow – color of areas defined by depthShadowLimit (default = pink) • depthShadowLimit – if negative, areas which are not visible, but higher than this value below terrain are displayed in colorShadow <p>Color formatting can use standard color names (e.g. red), rgb colors with transparency (e.g. rgb(0, 255, 0, 0.5)) or without transparency (e.g. rgb(0, 255, 0)), or they can use rgb hex format with 8, 6, 3, or 4 digits (e.g. #00ff00cc)</p>

Example Request	URL	https://api-test.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result
	Header Parameters	Accept: image/png
	Content	{ "colorVisible" : "blue", "colorInvisible" : "yellow", "colorNoData" : "red", "colorShadow" : "green", "depthShadowLimit" : -5 }

4.7. Viewshed Result - Success Responses

Code	200
Description	Success – Response contains results
Content Type	Depends on Accept header parameter in request
Content Description	The contents are returned as imagery in the requested format
Content Example	

4.8. Viewshed Result - Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not</pre>

	have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html>
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Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>

4.9. Asynchronous Processing

When a task will take a long time, it will be sent off for asynchronous processing rather than making the caller wait for a response. In this case, a response with a code of 202 is returned. This response contains a Location header parameter which is a URL for obtaining the status and when complete, the result.

The asynchronous status is a GET method that allows the user to check the status of the asynchronous job, and when complete, it gives the URL for the result. It uses the same basic authentication as the other methods.

URL Parameters	None								
Header Parameters	None								
Content	None								
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status	Header Parameters		Content			
URL	https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status								
Header Parameters									
Content									
Success Responses	<table border="1"> <tr> <td>Code</td> <td>200</td> </tr> <tr> <td>Description</td> <td>Success – Status check is successful, but the job is still processing</td> </tr> <tr> <td>Content Type</td> <td>application/json</td> </tr> <tr> <td>Content Description</td> <td>The contents are simple JSON with a “location” element echoing back the status URL and a “status” element that gives the current status of the processing.</td> </tr> </table>	Code	200	Description	Success – Status check is successful, but the job is still processing	Content Type	application/json	Content Description	The contents are simple JSON with a “location” element echoing back the status URL and a “status” element that gives the current status of the processing.
Code	200								
Description	Success – Status check is successful, but the job is still processing								
Content Type	application/json								
Content Description	The contents are simple JSON with a “location” element echoing back the status URL and a “status” element that gives the current status of the processing.								

	<table border="1"> <tr> <td data-bbox="381 254 560 409">Content Example</td> <td data-bbox="565 254 1477 409"> <pre>{ "location": "https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }</pre> </td> </tr> <tr> <td data-bbox="381 443 560 478">Code</td> <td data-bbox="565 443 1477 478">303</td> </tr> <tr> <td data-bbox="381 485 560 520">Description</td> <td data-bbox="565 485 1477 520">Redirect – Status check is successful and the job is complete</td> </tr> <tr> <td data-bbox="381 527 560 590">Header Parameters</td> <td data-bbox="565 527 1477 590">Location – URL that contains the result of the processing</td> </tr> <tr> <td data-bbox="381 596 560 659">Content Type</td> <td data-bbox="565 596 1477 659">No Content</td> </tr> <tr> <td data-bbox="381 665 560 728">Content Description</td> <td data-bbox="565 665 1477 728">There is no content</td> </tr> <tr> <td data-bbox="381 735 560 798">Content Example</td> <td data-bbox="565 735 1477 798"></td> </tr> </table>	Content Example	<pre>{ "location": "https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }</pre>	Code	303	Description	Redirect – Status check is successful and the job is complete	Header Parameters	Location – URL that contains the result of the processing	Content Type	No Content	Content Description	There is no content	Content Example			
Content Example	<pre>{ "location": "https://api-test.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }</pre>																
Code	303																
Description	Redirect – Status check is successful and the job is complete																
Header Parameters	Location – URL that contains the result of the processing																
Content Type	No Content																
Content Description	There is no content																
Content Example																	
<p>Failure Responses</p>	<table border="1"> <tr> <td data-bbox="381 842 560 877">Code</td> <td data-bbox="565 842 1477 877">401 UNAUTHORIZED</td> </tr> <tr> <td data-bbox="381 884 560 919">Description</td> <td data-bbox="565 884 1477 919">Error when the authentication fails possibly due to incorrect login</td> </tr> <tr> <td data-bbox="381 926 560 989">Content Type</td> <td data-bbox="565 926 1477 989">text/xml</td> </tr> <tr> <td data-bbox="381 995 560 1457">Content Example</td> <td data-bbox="565 995 1477 1457"> <pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font- size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font- size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin- top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content- container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre> </td> </tr> <tr> <td data-bbox="381 1493 560 1528">Code</td> <td data-bbox="565 1493 1477 1528">400</td> </tr> <tr> <td data-bbox="381 1535 560 1598">Description</td> <td data-bbox="565 1535 1477 1598">Model is not valid. This may be due to specifying the parameters or content incorrectly.</td> </tr> <tr> <td data-bbox="381 1604 560 1667">Content Type</td> <td data-bbox="565 1604 1477 1667">application/xml</td> </tr> <tr> <td data-bbox="381 1673 560 1757">Content Example</td> <td data-bbox="565 1673 1477 1757"> <pre><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2- TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></pre> </td> </tr> </table>	Code	401 UNAUTHORIZED	Description	Error when the authentication fails possibly due to incorrect login	Content Type	text/xml	Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font- size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font- size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin- top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content- container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre>	Code	400	Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.	Content Type	application/xml	Content Example	<pre><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2- TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></pre>
Code	401 UNAUTHORIZED																
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The asynchronous result is a GET method that simply gets back the result from an asynchronous processing job with the URL given in the asynchronous status call.

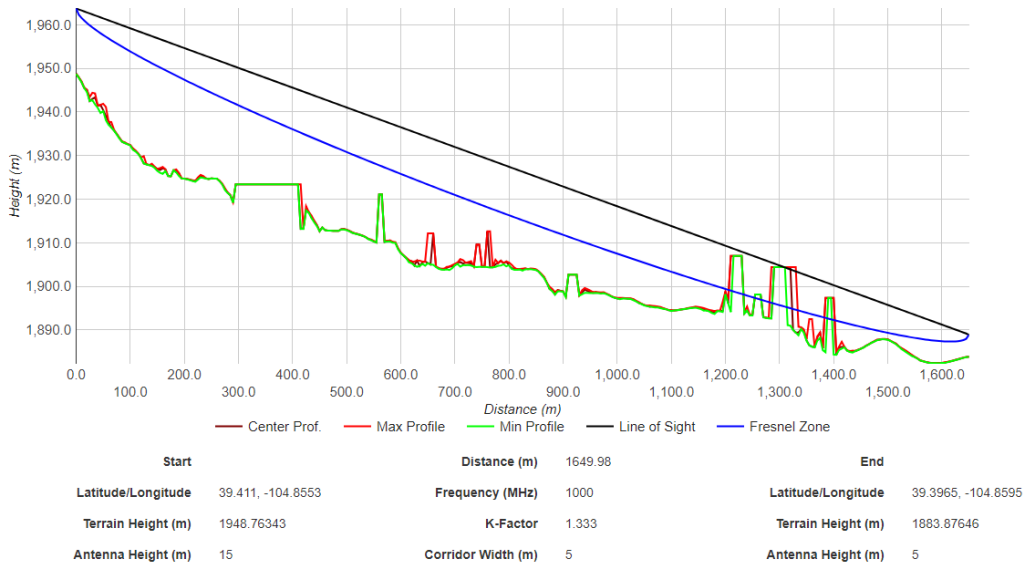
URL Parameters	None	
Header Parameters	None	
Content	None	
Example Request	URL	https://api.intermap.com/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff
	Header Parameters	
	Content	
Success Responses	Code	200
	Description	Success – Result returned
	Content Type	application/json
	Content Description	<p>The contents are the same as if they were returned without an asynchronous call. The contents are returned as a GeoJSON Polygon Feature with the geometry defining the bounding box of the result. It also contains the following properties:</p> <ul style="list-style-type: none"> • visibility – The visible area of the viewshed in percent • visibleArea – The visible area of the viewshed in square meters • invisibleArea – The invisible area of the viewshed in square meters • resultUrl – Url which is used in a follow-up Viewshed Result query
	Content Example	<pre>{ "type": "Feature", "geometry": { "type": "Polygon", "coordinates": [[[-105.00585416666672, 39.99547916666667], [-105.00585416666672, 40.00452083333333]]] } }</pre>

	<pre>[-104.99414583333332, 40.00452083333333], [-104.99414583333332, 39.99547916666667], [-105.00585416666672, 39.99547916666667]] } }, "properties": { "invisibleArea": 889631.41, "resultUrl": "https://api-test.intermap.com/api/raster/NEXTMap-USA_DSM/viewshed/0174a6df-720c-4dfd-9926-5e7954504b0d/result", "visibility": 10.76, "visibleArea": 107264.94 } }</pre>								
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	Code	401 UNAUTHORIZED							
Description	Error when the authentication fails possibly due to incorrect login								
Content Type	text/xml								
Content Example	<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html>								
<table border="1"> <tr> <td>Code</td> <td>400</td> </tr> <tr> <td>Description</td> <td>Model is not valid. This may be due to specifying the parameters or content incorrectly.</td> </tr> <tr> <td>Content Type</td> <td>application/xml</td> </tr> </table>	Code	400	Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.	Content Type	application/xml			
Code	400								
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.								
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Content Example	<string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string>
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5. Link Profile

A link profile is a set of points along a straight line from one location to another that combines a terrain profile with basic Fresnel zone information. The terrain profile component samples the elevation along the line. The Fresnel zone is based on an input frequency and k-factor and shows the zone in which obstructions are likely to contribute to interference in a signal transmission. Additionally, a link profile user can specify a corridor width to draw multiple parallel elevation profiles to assess the line-of-sight within a transmission corridor. Along-track step size between the start and end points can also be specified. Link profiles are often plotted as shown in the example below.



Gets a link profile between two points on a terrain data source.

Endpoint URL	https://api.intermap.com/linkpro/profile
Authentication	Basic
Methods	GET, POST

5.1. GET Method

URL Parameters	Name	Required	Description	Example
	startEasting startNorthing	Yes	Easting and northing coordinates of the start point for the profile. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	startEasting=-122.3096 startNorthing=37.9020
	endEasting endNorthing		Easting and northing coordinates of the end point for the profile. If the crs parameter is specified, the coordinate units are determined by the crs. If no crs parameter is given, then the coordinates are in WGS84 Geographic decimal degrees (EPSG:4326).	endEasting=-122.3093 endNorthing=37.8954
	startAntennaHeight endAntennaHeight	Yes	Antenna height for each of the start and end points above ground [meters]	startAntennaHeight=5 endAntennaHeight=1
	<i>corridorWidth</i>	Yes	Width of Corridor [meters]	corridorWidth=4
	<i>corridorStep</i>	Yes	Step size between parallel profiles in corridor calculation [meter]. Must be an integer divisor of <i>corridorWidth</i> .	corridorStep=1
	<i>profileStep</i>	Yes	Sampling step size along the profile between the start and end points [meters].	profileStep=5
	<i>frequency</i>	Yes	radio link frequency [MHz]	frequency=2400
	<i>kFactor</i>	No	K-Factor used in LOS calculation. If not specified, default is 1.333.	kfactor=1.333
	<i>dataSource</i>	Yes	An elevation data source used for terrain profiles calculation. Values for this parameter are any of the data source IDs returned from a Terrain Sources call. This should typically be a DSM layer.	dataSource=Sample-NEXTMapOne-Elevation-DSM
<i>dataSourceAntennaHeight</i>	No	An elevation data source used for antenna height calculation. Values for this parameter are any of the data source IDs returned from a Terrain Sources call. This allows for	dataSourceAntennaHeight=Sample-NEXTMapOne-Elevation-DTM	

	<p>an above-ground antenna height as opposed to an above-obstruction antenna height if a DTM data source is specified here. If it is not specified, dataSource is used.</p>		
	<i>crs</i>	No	<p>Coordinate reference system (CRS) for the input coordinates in format EPSG:identifier where identifier is the EPSG code for the given CRS. Default if not specified is EPSG:4326.</p>
Header Parameters			
Content			
Example Request	URL	<p>https://api.intermap.com/linkpro/profile?startEasting=-122.3096&startNorthing=37.902&endEasting=-122.3093&endNorthing=37.8954&corridorStep=1&startAntennaHeight=5&endAntennaHeight=1&corridorWidth=4&profileStep=5&frequency=2400&dataSource=Sample-NEXTMapOne-Elevation-DSM&kFactor=1.333</p>	
	Header Parameters		
	Content		

5.2. POST Method

URL Parameters	
Header Parameters	<p>Content-Type: application/json Accept: application/json X-Task-Sync-Timeout: 120 (value is timeout in seconds)</p>

<p>Content</p>	<p>Request content is in GeoJSON format and contains two Point Features in a FeatureCollection whose geometry specify the coordinates of the start and end points for the link profile. Each point must also contain an antennaHeight property. There are also the following properties in the Feature Collection:</p> <ul style="list-style-type: none"> • corridorWidth – width of the corridor in meters (required) • corridorStep – step size between parallel profiles in corridor calculation in meters. Note that this must be an integer divisor of corridorWidth (required) • profileStep – sampling step size along the profile between the start and end points in meters (required) • frequency – radio link frequency in MHz (required) • kFactor – K-factor used in LOS calculation (optional: default = 1.333) • dataSource – elevation data source used for terrain profiles calculation. Values for this parameter are any of the data source IDs returned from a Terrain Sources call. This should typically be a DSM layer. (required) • dataSourceAntennaHeight – elevation data source used for antenna height calculation. Values for this parameter are any of the data source IDs returned from a Terrain Sources call. This allows for an above-ground antenna height as opposed to an above-obstruction antenna height if a DTM source is specified here. (optional: default = dataSource) <p>The Feature Collection may also contain a crs which is used to identify the Coordinate Reference System of the point coordinates. If no crs is given, WGS84 Geographic decimal degrees (EPSG:4326) is used.</p>						
<p>Example Request</p>	<table border="1"> <tr> <td data-bbox="386 1129 574 1163">URL</td> <td data-bbox="574 1129 1485 1163">https://api.intermap.com/linkpro/profile</td> </tr> <tr> <td data-bbox="386 1163 574 1234">Header Parameters</td> <td data-bbox="574 1163 1485 1234">Content-Type: application/json</td> </tr> <tr> <td data-bbox="386 1234 574 1879">Content</td> <td data-bbox="574 1234 1485 1879"> <pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-122.3096, 37.902] }, "properties": { "antennaHeight": 5 } }, { "type": "Feature", "geometry": {</pre> </td> </tr> </table>	URL	https://api.intermap.com/linkpro/profile	Header Parameters	Content-Type: application/json	Content	<pre>{ "type": "FeatureCollection", "crs": { "type": "name", "properties": { "name": "EPSG:4326" } }, "features": [{ "type": "Feature", "geometry": { "type": "Point", "coordinates": [-122.3096, 37.902] }, "properties": { "antennaHeight": 5 } }, { "type": "Feature", "geometry": {</pre>
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	<pre> "type": "Point", "coordinates": [-122.3093, 37.8954] }, "properties": { "antennaHeight": 1 } },], "properties": { "corridorWidth": 4, "corridorStep": 1, "profileStep": 5, "frequency": 2400, "dataSource": "Sample-NEXTMapOne-Elevation-DSM" } } </pre>
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5.3. Success Responses

Code	200
Description	Success – Response contains results
Content Type	application/json
Content Description	<p>The contents are returned as a json Feature Collection with multiple point features where the geometry defines the coordinates of the point in the profile.</p> <p>There will be features for each point in the parallel lines of the corridorWidth, labelled with IDs of L*, R*, or O* depending on if the profile is on the left (L) or right (R) of the center profile (O*). If there are more than 3 parallel profiles, they will be labeled moving outwards from the center with L1, L2, etc. and R1, R2, etc. All point IDs will then be followed with a numeric ID, starting at 0 and increasing by 1 from the start of the profile. For example, the center profile will be labeled 0.0, 0.1, 0.2, etc. and the first left profile will be labelled L1.0, L1.1, L1.2, etc.</p> <p>All points will contain properties distance and value, where distance is the distance in meters since the last point (ex. 0.0 to 0.1) and value is the sampled terrain height at that point in meters. Additionally, the center profile will contain the following properties:</p> <ul style="list-style-type: none"> • fresnelZone – The height in meters of the first Fresnel zone at that point • lineOfSight – The height in meters of the direct line of sight vector at that point • maxValue – The maximum terrain height in meters from a cross-section of the parallel profiles at that point • minValue – The minimum terrain height in meters from a cross-section of the parallel profiles at that point <p>The overall FeatureCollection also contains the following properties:</p> <ul style="list-style-type: none"> • endAntenaElevation – The height in meters of the end point of the profile • startAntenaElevation – The height in meters of the start point of the profile • length – the overall length of the profile in meters • resultUrl – Url which is used in a follow-up Linkpro Result query

Content Example	<pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "id": "L2.0", "geometry": { "type": "Point", "coordinates": [-122.30962272565768, 37.901999389489326] }, "properties": { "distance": 0, "value": 29.60384 } }, { "type": "Feature", "id": "0.0", "geometry": { "type": "Point", "coordinates": [-122.3096, 37.902] }, "properties": { "distance": 0, "fresnelZone": 34.603840000000005, "lineOfSight": 34.603840000000005, "maxValue": 29.60384, "minValue": 29.60384, "value": 29.60384 } }, { "type": "Feature", "id": "0.1", "geometry": { "type": "Point", "coordinates": [-122.30959795354305, 37.901955020082362] }, "properties": { "distance": 5, "fresnelZone": 33.705601743977176, "lineOfSight": 34.493470340967178, "maxValue": 29.60384, "minValue": 29.60384, "value": 29.60384 } }] }</pre>
------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

```

    }
  },
  .....
  {
    "type": "Feature",
    "id": "R2.146",
    "geometry": {
      "type": "Point",
      "coordinates": [
        -122.30927852003252,
        37.895428088024111
      ]
    },
    "properties": {
      "distance": 5,
      "value": 16.97756
    }
  },
  {
    "type": "Feature",
    "id": "R2.147",
    "geometry": {
      "type": "Point",
      "coordinates": [
        -122.30927727636852,
        37.8954006866731
      ]
    },
    "properties": {
      "distance": 3.0391387143232813,
      "value": 16.97756
    }
  }
],
"properties": {
  "endAntenaElevation": 1,
  "length": 733.03913798755445,
  "resultUrl": "https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result",
  "startAntenaElevation": 5
}
}

```

Code	202
Description	Accepted – Processing will take a long time so an asynchronous job has been created
Header Parameters	Location – Contains a URL which is used in a GET call to get the status and result URL for the job (see Asynchronous Processing)
Content Type	application/json
Content Description	The contents simply contain the word null because the desired URL is in the header rather than the contents
Content Example	null

5.4. Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login
Content Type	text/xml
Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre>

Code	400
Description	Model is not valid. This may be due to specifying the parameters or content incorrectly.
Content Type	application/xml
Content Example	<pre><string>Model is not valid. This error has been assigned an Incident ID of '66480-API2-TEST03-170605-193846'. Provide this Incident ID to customer support when you need assistance.</string></pre>

5.5. Link Profile Result – GET Method

Endpoint URL is extracted from the resultUrl property in the result from the Link Profile GET or POST method. It uses the same basic authentication.

URL Parameters	The parameters are used to specify how the resulting link profile appears. All parameters are optional. Note that the color elements are applicable only for Accept: application/vnd.google-earth.kml+xml format.			
	Name	Required	Description	Example
	lineOfSight	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	lineOfSight=TRUE
	fresnelZone	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	fresnelZone=TRUE
	minProfile	No	TRUE/FALSE setting controlling if line of sight	minProfile=TRUE

	<table border="1"> <tr> <td colspan="2"></td> <td colspan="2">geometry is returned (default = TRUE)</td> </tr> <tr> <td>maxProfile</td> <td>No</td> <td>TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)</td> <td>maxProfile=TRUE</td> </tr> <tr> <td>corridorProfile</td> <td>No</td> <td>TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)</td> <td>corridorProfile=TRUE</td> </tr> <tr> <td>lineOfSightColor</td> <td>No</td> <td>Color of line of sight (default = Yellow)</td> <td>lineOfSightColor=Yellow</td> </tr> <tr> <td>fresnelZoneColor</td> <td>No</td> <td>Color of Fresnel zone (default = Cyan)</td> <td>fresnelZoneColor=Cyan</td> </tr> <tr> <td>minProfileColor</td> <td>No</td> <td>Color of minimum terrain profile (default = Green)</td> <td>minProfileColor=Green</td> </tr> <tr> <td>maxProfileColor</td> <td>No</td> <td>Color of maximum terrain profile (default = Red)</td> <td>maxProfileColor=Red</td> </tr> <tr> <td>corridorProfilesColor</td> <td>No</td> <td>Color of parallel corridor terrain profiles (default = Blue)</td> <td>corridorProfilesColor=Blue</td> </tr> </table> <p>Color formatting can use standard color names (e.g. red), rgb colors with transparency (e.g. rgb(0, 255, 0, 0.5)) or without transparency (e.g. rgb(0, 255, 0)), or they can use rgb hex format with 8, 6, 3, or 4 digits (e.g. #00ff00cc)</p>			geometry is returned (default = TRUE)		maxProfile	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	maxProfile=TRUE	corridorProfile	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	corridorProfile=TRUE	lineOfSightColor	No	Color of line of sight (default = Yellow)	lineOfSightColor=Yellow	fresnelZoneColor	No	Color of Fresnel zone (default = Cyan)	fresnelZoneColor=Cyan	minProfileColor	No	Color of minimum terrain profile (default = Green)	minProfileColor=Green	maxProfileColor	No	Color of maximum terrain profile (default = Red)	maxProfileColor=Red	corridorProfilesColor	No	Color of parallel corridor terrain profiles (default = Blue)	corridorProfilesColor=Blue
		geometry is returned (default = TRUE)																															
maxProfile	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	maxProfile=TRUE																														
corridorProfile	No	TRUE/FALSE setting controlling if line of sight geometry is returned (default = TRUE)	corridorProfile=TRUE																														
lineOfSightColor	No	Color of line of sight (default = Yellow)	lineOfSightColor=Yellow																														
fresnelZoneColor	No	Color of Fresnel zone (default = Cyan)	fresnelZoneColor=Cyan																														
minProfileColor	No	Color of minimum terrain profile (default = Green)	minProfileColor=Green																														
maxProfileColor	No	Color of maximum terrain profile (default = Red)	maxProfileColor=Red																														
corridorProfilesColor	No	Color of parallel corridor terrain profiles (default = Blue)	corridorProfilesColor=Blue																														
<p>Header Parameters</p>	<p>Accept: application/vnd.google-earth.kml+xml or Accept: application/json</p>																																
<p>Content</p>																																	
<p>Example Request</p>	<table border="1"> <tr> <td data-bbox="399 1474 594 1602"> <p>URL</p> </td> <td data-bbox="594 1474 1484 1602"> <p>https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result</p> </td> </tr> <tr> <td data-bbox="399 1602 594 1675"> <p>Header Parameters</p> </td> <td data-bbox="594 1602 1484 1675"> <p>Accept: application/json</p> </td> </tr> <tr> <td data-bbox="399 1675 594 1711"> <p>Content</p> </td> <td data-bbox="594 1675 1484 1711"></td> </tr> </table>	<p>URL</p>	<p>https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result</p>	<p>Header Parameters</p>	<p>Accept: application/json</p>	<p>Content</p>																											
<p>URL</p>	<p>https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result</p>																																
<p>Header Parameters</p>	<p>Accept: application/json</p>																																
<p>Content</p>																																	

5.6. Linkpro Result – POST Method

URL Parameters							
Header Parameters	Accept: application/vnd.google-earth.kml+xml or Accept: application/json						
Content	<p>The content is used to specify how the resulting link profile appears. The content may be empty to use the default visualization options. Note that the color elements are applicable only for Accept: application/vnd.google-earth.kml+xml format.</p> <p>The content is simple JSON with the following elements:</p> <ul style="list-style-type: none"> • lineOfSight – controls if the line of sight geometry is returned (default = TRUE) • fresnelZone – controls if the Fresnel zone geometry is returned (default = TRUE) • minProfile – controls if the minimum terrain profile is returned (default = TRUE) • maxProfile – controls if the maximum terrain profile is returned (default = TRUE) • corridorProfile – controls if the corridor terrain profiles are returned (default = TRUE) • lineOfSightColor – color of line of sight (default is Yellow) • fresnelZoneColor – color of Fresnel zone profile (default is Cyan) • minProfileColor – color of the minimum terrain profile (default is Green) • maxProfileColor – color of the maximum terrain profile (default is Red) • corridorProfilesColor – color of parallel corridor profiles (default is Blue) <p>Color formatting can use standard color names (e.g. red), rgb colors with transparency (e.g. rgb(0, 255, 0, 0.5)) or without transparency (e.g. rgb(0, 255, 0)), or they can use rgb hex format with 8, 6, 3, or 4 digits (e.g. #00ff00cc)</p>						
Example Request	<table border="1"> <tr> <td data-bbox="386 1371 578 1444">URL</td> <td data-bbox="578 1371 1484 1444">https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result</td> </tr> <tr> <td data-bbox="386 1444 578 1518">Header Parameters</td> <td data-bbox="578 1444 1484 1518">Accept: application/json</td> </tr> <tr> <td data-bbox="386 1518 578 1864">Content</td> <td data-bbox="578 1518 1484 1864"> <pre>{ "lineOfSight": "true false", "fresnelZone": "true false", "minProfile": "true false", "maxProfile": "true false", "corridorProfiles": "true false", "lineOfSightColor": "yellow", "fresnelZoneColor": "cyan", "minProfileColor": "green", "maxProfileColor": "red", "corridorProfilesColor": "blue" }</pre> </td> </tr> </table>	URL	https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result	Header Parameters	Accept: application/json	Content	<pre>{ "lineOfSight": "true false", "fresnelZone": "true false", "minProfile": "true false", "maxProfile": "true false", "corridorProfiles": "true false", "lineOfSightColor": "yellow", "fresnelZoneColor": "cyan", "minProfileColor": "green", "maxProfileColor": "red", "corridorProfilesColor": "blue" }</pre>
URL	https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result						
Header Parameters	Accept: application/json						
Content	<pre>{ "lineOfSight": "true false", "fresnelZone": "true false", "minProfile": "true false", "maxProfile": "true false", "corridorProfiles": "true false", "lineOfSightColor": "yellow", "fresnelZoneColor": "cyan", "minProfileColor": "green", "maxProfileColor": "red", "corridorProfilesColor": "blue" }</pre>						

5.7. Linkpro Result - Success Responses

Code	200
Description	Success – Response contains results
Content Type	Depends on Accept header parameter in request
Content Description	The contents are in the same format as the Link Profile method, but only contains the components that were selected in the request (e.g. only minimum and maximum of center profile). For JSON, the color definitions are ignored.
Content Example	<pre> JSON example: { "type": "FeatureCollection", "features": [{ "type": "Feature", "id": "0.0", "geometry": { "type": "Point", "coordinates": [-122.3096, 37.902] }, "properties": { "distance": 0, "maxValue": 29.60384, "minValue": 29.60384 } }, { "type": "Feature", "id": "0.1", "geometry": { "type": "Point", "coordinates": [-122.30959795354305, 37.901955020082362] }, "properties": { "distance": 5, "maxValue": 29.60384, "minValue": 29.60384 } }], { "type": "Feature", "id": "0.146", "geometry": { "type": "Point", "coordinates": [-122.30927852003252, 37.895428088024111] } } </pre>

```
]
},
"properties": {
  "distance": 5,
  "maxValue": 16.97756,
  "minValue": 16.97756
}
},
{
  "type": "Feature",
  "id": "R2.147",
  "geometry": {
    "type": "Point",
    "coordinates": [
      -122.30927727636852,
      37.8954006866731
    ]
  },
  "properties": {
    "distance": 3.0391387143232813,
    "maxValue": 16.97756,
    "minValue": 16.97756
  }
}
],
"properties": {
  "endAntenaElevation": 1,
  "length": 733.03913798755445,
  "resultUrl": "https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result",
  "startAntenaElevation": 5
}
}
```

KML example:

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://www.opengis.net/kml/2.2" xmlns:gx="http://www.google.com/kml/ext/2.2"
xmlns:kml="http://www.opengis.net/kml/2.2" xmlns:atom="http://www.w3.org/2005/Atom">
  <Document>
    <open>1</open>
    <name />
    <Style id="profile_sub">
      <LineStyle>
        <color>ffff0000</color>
        <width>2</width>
      </LineStyle>
    </Style>
    <Style id="profile_max">
      <LineStyle>
        <color>ff0000ff</color>
        <width>2</width>
      </LineStyle>
    </Style>
    <Style id="profile_min">
      <LineStyle>
        <color>ff008000</color>
        <width>2</width>
```



```
</LineStyle>
</Style>
<Style id="line_visibility">
  <LineStyle>
    <color>ff00fff</color>
    <width>2</width>
  </LineStyle>
</Style>
<Style id="fresnel_visibility">
  <LineStyle>
    <color>ffffff0</color>
    <width>2</width>
  </LineStyle>
</Style>
<Style id="profile_avg">
  <LineStyle>
    <color>ff00fff</color>
    <width>4</width>
  </LineStyle>
</Style>
<Style id="profile_line-of-sight">
  <LineStyle>
    <color>ffffff</color>
    <width>4</width>
  </LineStyle>
</Style>
<Style id="profile_landuse">
  <LineStyle>
    <color>0000000</color>
    <width>4</width>
  </LineStyle>
</Style>
<Style id="profile_datasource">
  <LineStyle>
    <color>0000000</color>
    <width>4</width>
  </LineStyle>
</Style>
<Style id="profile_quality">
  <LineStyle>
    <color>0000000</color>
    <width>4</width>
  </LineStyle>
</Style>
<Style id="point_A">
  <IconStyle>
    <Icon>
      <href>http://maps.google.com/mapfiles/kml/paddle/A.png</href>
    </Icon>
  </IconStyle>
</Style>
<Style id="point_B">
  <IconStyle>
    <Icon>
      <href>http://maps.google.com/mapfiles/kml/paddle/B.png</href>
    </Icon>
  </IconStyle>
</Style>
```

```

</Style>
<Placemark>
  <name>A</name>
  <styleUrl>#point_A</styleUrl>
  <Point>
    <altitudeMode>absolute</altitudeMode>
    <coordinates>-122.3096,37.902,29.60384</coordinates>
  </Point>
</Placemark>
<Placemark>
  <name>B</name>
  <styleUrl>#point_B</styleUrl>
  <Point>
    <altitudeMode>absolute</altitudeMode>
    <coordinates>-122.30927727636852,37.8954006866731,16.97756</coordinates>
  </Point>
</Placemark>
<Placemark>
  <name>Max</name>
  <styleUrl>#profile_max</styleUrl>
  <LineString>
    <altitudeMode>absolute</altitudeMode>
    <coordinates>
      -122.3096,37.902,29.60384
      -122.30959795354305,37.901955020082362,29.60384
    </coordinates>
    .....
    -122.30927727636852,37.8954006866731,16.97756
    -122.30927852003252,37.895428088024111,16.97756
  </coordinates>
</LineString>
</Placemark>
<Placemark>
  <name>Min</name>
  <styleUrl>#profile_min</styleUrl>
  <LineString>
    <altitudeMode>absolute</altitudeMode>
    <coordinates>
      -122.3096,37.902,29.60384
      -122.30959795354305,37.901955020082362,29.60384
    </coordinates>
    .....
    -122.30927727636852,37.8954006866731,16.97756
    -122.30927852003252,37.895428088024111,16.97756
  </coordinates>
</LineString>
</Placemark>
</Document>
</kml>

```

5.8. Linkpro Result - Error Responses

Code	401 UNAUTHORIZED
Description	Error when the authentication fails possibly due to incorrect login

Content Type	text/xml
Content Example	<pre><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"> <html xmlns="http://www.w3.org/1999/xhtml"> <head> <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1"/> <title>401 - Unauthorized: Access is denied due to invalid credentials.</title> <style type="text/css"> <!-- body{margin:0;font-size:.7em;font-family:Verdana, Arial, Helvetica, sans-serif;background:#EEEEEE;} fieldset{padding:0 15px 10px 15px;} h1{font-size:2.4em;margin:0;color:#FFF;} h2{font-size:1.7em;margin:0;color:#CC0000;} h3{font-size:1.2em;margin:10px 0 0 0;color:#000000;} #header{width:96%;margin:0 0 0 0;padding:6px 2% 6px 2%;font-family:"trebuchet MS", Verdana, sans-serif;color:#FFF; background-color:#555555;} #content{margin:0 0 2%;position:relative;} .content-container{background:#FFF;width:96%;margin-top:8px;padding:10px;position:relative;} --> </style> </head> <body> <div id="header"><h1>Server Error</h1></div> <div id="content"> <div class="content-container"><fieldset> <h2>401 - Unauthorized: Access is denied due to invalid credentials.</h2> <h3>You do not have permission to view this directory or page using the credentials that you supplied.</h3> </fieldset></div> </div> </body> </html></pre>

5.9. Asynchronous Processing

When a task will take a long time, it will be sent off for asynchronous processing rather than making the caller wait for a response. In this case, a response with a code of 202 is returned. This response contains a Location header parameter which is a URL for obtaining the status and when complete, the result.

The asynchronous status is a GET method that allows the user to check the status of the asynchronous job, and when complete, it gives the URL for the result. It uses the same basic authentication as the other methods.

URL Parameters	None						
Header Parameters	None						
Content	None						
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status	Header Parameters		Content	
URL	https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status						
Header Parameters							
Content							
Success Responses	<table border="1"> <tr> <td>Code</td> <td>200</td> </tr> <tr> <td>Description</td> <td>Success – Status check is successful, but the job is still processing</td> </tr> <tr> <td>Content Type</td> <td>application/json</td> </tr> </table>	Code	200	Description	Success – Status check is successful, but the job is still processing	Content Type	application/json
Code	200						
Description	Success – Status check is successful, but the job is still processing						
Content Type	application/json						

	<table border="1"> <tr> <td>Content Description</td> <td>The contents are simple JSON with a "location" element echoing back the status URL and a "status" element that gives the current status of the processing.</td> </tr> <tr> <td>Content Example</td> <td>{ "location": "https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }</td> </tr> <tr> <td>Code</td> <td>303</td> </tr> <tr> <td>Description</td> <td>Redirect – Status check is successful and the job is complete</td> </tr> <tr> <td>Header Parameters</td> <td>Location – URL that contains the result of the processing</td> </tr> <tr> <td>Content Type</td> <td>No Content</td> </tr> <tr> <td>Content Description</td> <td>There is no content</td> </tr> <tr> <td>Content Example</td> <td></td> </tr> </table>	Content Description	The contents are simple JSON with a "location" element echoing back the status URL and a "status" element that gives the current status of the processing.	Content Example	{ "location": "https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }	Code	303	Description	Redirect – Status check is successful and the job is complete	Header Parameters	Location – URL that contains the result of the processing	Content Type	No Content	Content Description	There is no content	Content Example	
Content Description	The contents are simple JSON with a "location" element echoing back the status URL and a "status" element that gives the current status of the processing.																
Content Example	{ "location": "https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff/status", "status": "processing" }																
Code	303																
Description	Redirect – Status check is successful and the job is complete																
Header Parameters	Location – URL that contains the result of the processing																
Content Type	No Content																
Content Description	There is no content																
Content Example																	
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The asynchronous result is a GET method that simply gets back the result from an asynchronous processing job with the URL given in the asynchronous status call.

URL Parameters	None								
Header Parameters	None								
Content	None								
Example Request	<table border="1"> <tr> <td>URL</td> <td>https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff</td> </tr> <tr> <td>Header Parameters</td> <td></td> </tr> <tr> <td>Content</td> <td></td> </tr> </table>	URL	https://api.intermap.com/linkpro/tasks/02237c3e-4f0e-e711-80c3-000d3a604bff	Header Parameters		Content			
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	<ul style="list-style-type: none">• lineOfSight – The height in meters of the direct line of sight vector at that point• maxValue – The maximum terrain height in meters from a cross-section of the parallel profiles at that point• minValue – The minimum terrain height in meters from a cross-section of the parallel profiles at that point <p>The overall FeatureCollection also contains the following properties:</p> <ul style="list-style-type: none">• endAntenaElevation – The height in meters of the end point of the profile• startAntenaElevation – The height in meters of the start point of the profile• length – the overall length of the profile in meters• resultUrl – Url which is used in a follow-up Linkpro Result query
Content Example	<pre>{ "type": "FeatureCollection", "features": [{ "type": "Feature", "id": "L2.0", "geometry": { "type": "Point", "coordinates": [-122.30962272565768, 37.901999389489326] }, "properties": { "distance": 0, "value": 29.60384 } }, { "type": "Feature", "id": "0.0", "geometry": { "type": "Point", "coordinates": [-122.3096, 37.902] }, "properties": { "distance": 0, "fresnelZone": 34.603840000000005, "lineOfSight": 34.603840000000005, "maxValue": 29.60384, "minValue": 29.60384, "value": 29.60384 } }] }</pre>

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    }  
  },  
  {  
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    "geometry": {  
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      "coordinates": [  
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      ]  
    },  
    "properties": {  
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      "lineOfSight": 34.493470340967178,  
      "maxValue": 29.60384,  
      "minValue": 29.60384,  
      "value": 29.60384  
    }  
  }  
],  
  
.....  
  
  {  
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    "id": "R2.146",  
    "geometry": {  
      "type": "Point",  
      "coordinates": [  
        -122.30927852003252,  
        37.895428088024111  
      ]  
    },  
    "properties": {  
      "distance": 5,  
      "value": 16.97756  
    }  
  },  
  {  
    "type": "Feature",  
    "id": "R2.147",  
    "geometry": {  
      "type": "Point",  
      "coordinates": [  
        -122.30927727636852,  
        37.8954006866731  
      ]  
    },  
    "properties": {  
      "distance": 3.0391387143232813,  
      "value": 16.97756  
    }  
  }  
],
```

	<pre> "properties": { "endAntenaElevation": 1, "length": 733.03913798755445, "resultUrl": "https://api.intermap.com/linkpro/profile/e808a194-5a2b-4d55-b4cb-d6320dd22585/result", "startAntenaElevation": 5 } </pre>		
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