# Cesium ion 介绍

Cesium ion是一个用于托管地理空间数据的开放平台。主要有以下作用:

1. 管理你的应用程序中用到的地理数据，为你的应用提供服务。
2. 将您的3D数据转换成3D Tiles 数据流，以便将精确、高度详细的内容流式传输到任何设备。
3. 整合你的数据和Cesium的基础数据（如地形、建筑、卫星影像等）

## 数据上传

1、当你将数据上传到Cesium ion上时，它会转换成3D Tiles，如果是图像数据，会转换成WNTS/TMS。

2、矢量文件（KML、GeoJSON或CZML）和小型glTF文件可以按原样提供。

3、您上传数据时，会选择上载选项，这决定创建的资产类型。Cesium ion针对3D地理空间4、应用程序中的典型用途优化了每种资产类型。

5、可以通过rest api上传数据。

6、类似地，数据可以通过CesiumJs客户端进行调用，或直接通过restapi访问查看分片数据。

## Cesium ion 数据资产类型

Cesium ion可接受多种数据格式，并将其转换为以下五种之一：

|  |  |
| --- | --- |
| **3D Tiles** | 一个海量异构三维地理空间数据流的开放规范 |
| **Imagery** | [TMS](https://www.ogc.org/standards/tms) 或[WMTS](https://www.ogc.org/standards/wmts" \t "_blank)图层，来源于遥感影像. |
| **Terrain** | 从栅格地形创建的量化网格分片集 |
| **glTF** | 一种二进制gltf模型 |
| **Native** | 数据不处理，并且以与上载时相同的格式承载 |

## 支持的数据格式

下表列出了可接受的数据格式及其相应的资产类型:

| Format | 3D Tiles | Terrain | Imagery | glTF | Native |
| --- | --- | --- | --- | --- | --- |
| Zip Archive (.zip) | 🗸 | 🗸 | 🗸 | 🗸 |  |
| glTF (.gltf, .glb) | 🗸 |  |  | 🗸 |  |
| Filmbox (.fbx) | 🗸 |  |  | 🗸 |  |
| CityGML (.citygml, .xml, .gml) | 🗸 |  |  |  |  |
| CZML (.czml) |  |  |  |  | 🗸 |
| GeoJSON (.json, .geojson, .topojson) |  |  |  |  | 🗸 |
| KML (.kml, .kmz) | 🗸 |  |  |  | 🗸 |
| LASer (.las, .laz) | 🗸 |  |  |  |  |
| COLLADA (.dae) | 🗸 |  |  | 🗸 |  |
| Wavefront OBJ (.obj) | 🗸 |  |  | 🗸 |  |
| Floating Point Raster (.flt) |  | 🗸 | 🗸 |  |  |
| Arc/Info ASCII Grid (.asc) |  | 🗸 | 🗸 |  |  |
| Source Map (.src) |  | 🗸 | 🗸 |  |  |
| GeoTIFF (.tiff, .tif) |  | 🗸 | 🗸 |  |  |
| Erdas Imagine (.img) |  | 🗸 | 🗸 |  |  |
| USGS ASCII DEM and CDED (.dem) |  | 🗸 | 🗸 |  |  |
| JPEG (.jpg, .jpeg) |  |  | 🗸 |  |  |
| PNG (.png) |  |  | 🗸 |  |  |
| Cesium Terrain Database (.terraindb) |  | 🗸 |  |  |  |

## 上传说明

1. 在Cesium ion 的 [**My Assets**](https://cesium.com/ion/assets)页，选择 **Add data**.
2. 选择一个或多个文件.
3. 使用下表中的信息设置上载选项。
4. 上传完成后，如果有需要，可以编辑数据的位置、方向和大小。

|  |  |  |  |
| --- | --- | --- | --- |
| **源数据** | **数据类型** | **上传后资产类型** | **上传选项** |
| Photogrammetry or LiDAR-derived mesh | 3D Capture | 3D Tiles | * Draco compression * WebP Compression   Can be used with the [location editor](https://cesium.com/docs/tutorials/locate-data/). |
| Point clouds | Point Cloud | 3D Tiles | * Draco compression   Can be used with the [location editor](https://cesium.com/docs/tutorials/locate-data/). |
| 3D buildings (KML/COLLADA) | KML/COLLADA (tile as 3D Tiles) | 3D Tiles | * Draco compression * Reference terrain (used to determine the height of features so they match the terrain you plan to use in your application) |
| 3D buildings (CityGML) | CityGML | 3D Tile | * Draco compression * Ignore colors * Ignore textures * Clamp to terrain * Clamp to terrain layer (if clamp to terrain is selected) |
| BIM, CAD, or generic 3D models | 3D Model (tile as 3D Tiles) | 3D Tiles | Can be used with the [location editor](https://cesium.com/docs/tutorials/locate-data/). |
| Simple 3D models   * For simple models that don't need to be tiled. | 3D Model (convert to glTF) | glTF | * Optimize for rendering * Draco compression |
| Imagery (maps) | Raster Imagery | Imagery (TMS and WMTS) |  |
| Terrain (heightmaps) | Raster Terrain | Terrain (quantized-mesh) | * Base terrain (terrain with which your raster data will be combined) * Height unit (the unit for the heights in the source data) * Height reference (the surface from which heights in the source data are measured) |
| Any data already in 3D Tiles | 3D Tiles | 3D Tiles |  |
| KML, CZML, or GeoJSON | KML, CZML, or GeoJSON (host without tiling) | Native |  |