ANTURA

# Antura IFC Viewer

Antura AB, www.antura.se

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# Introduction

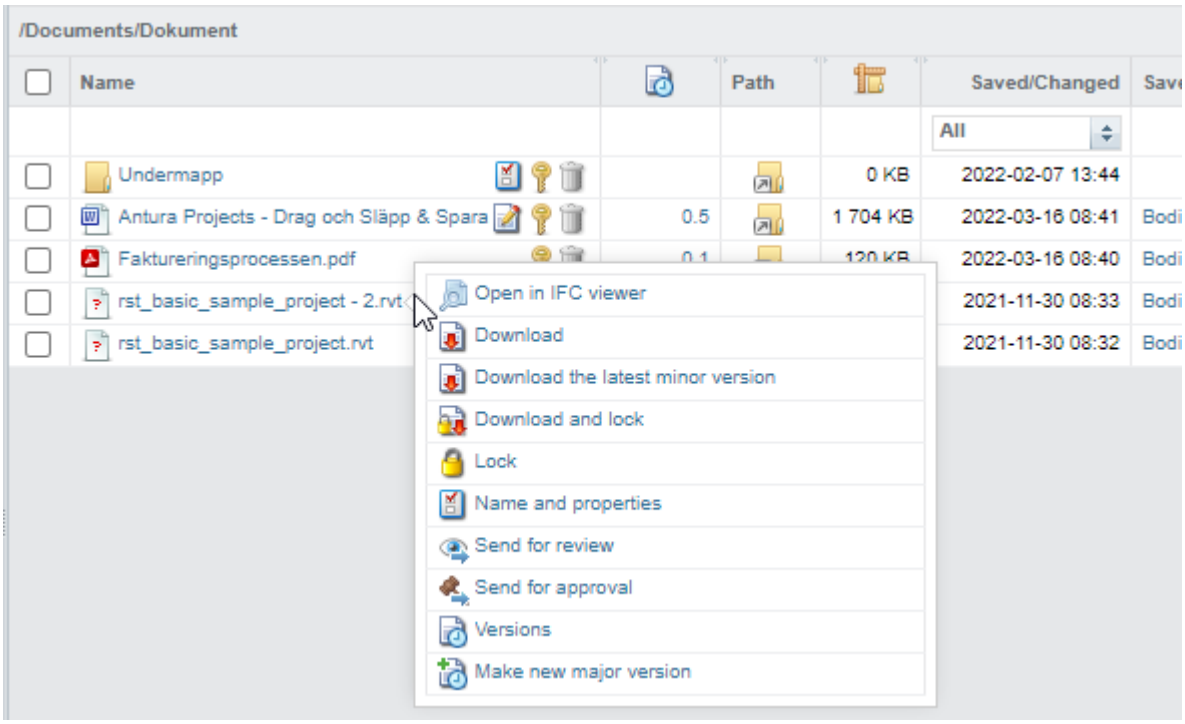
With the add-on product *Antura IFC Viewer*, it is possible to open and view files in Antura Project's document archive for standard drawings in 2D and 3D formats. When the add-on product is activated, a new menu option "Open in IFC viewer" becomes available when you click on a file in the file archive. Clicking the menu option uploads the file to a web service that displays the file in a new tab in the browser.

No software needs to be installed on your computer except a standard web browser. For on-prem hosting of Antura, a connection to the internet is required.

# Display files in Antura IFC Viewer

## Open and display a file in 2D och 3D format

To open and view a file in the IFC viewer, the user clicks on the file to open a menu. The option "Open in IFC viewer" is displayed at the top of the menu, provided that the add-on product is activated correctly and that the function is available for the current file (see the section "Supported file formats").




When you choose to view the file in IFC viewer, the file is converted by Autodesk to a view-friendly format. This may take some time depending on the file size, how much load and how long the queue is on Autodesks servers at the time. If the file is very large, it can take up to 1 hour. The file is opened for presentation in the viewer, which is opened in a new tab.

For server status at Autodesk see: https://health.autodesk.com/ under "Forge".

## Functions in Antura IFC Viewer

The tool menu is displayed at the bottom of Antura IFC Viewer and consists of e.g. the following features:

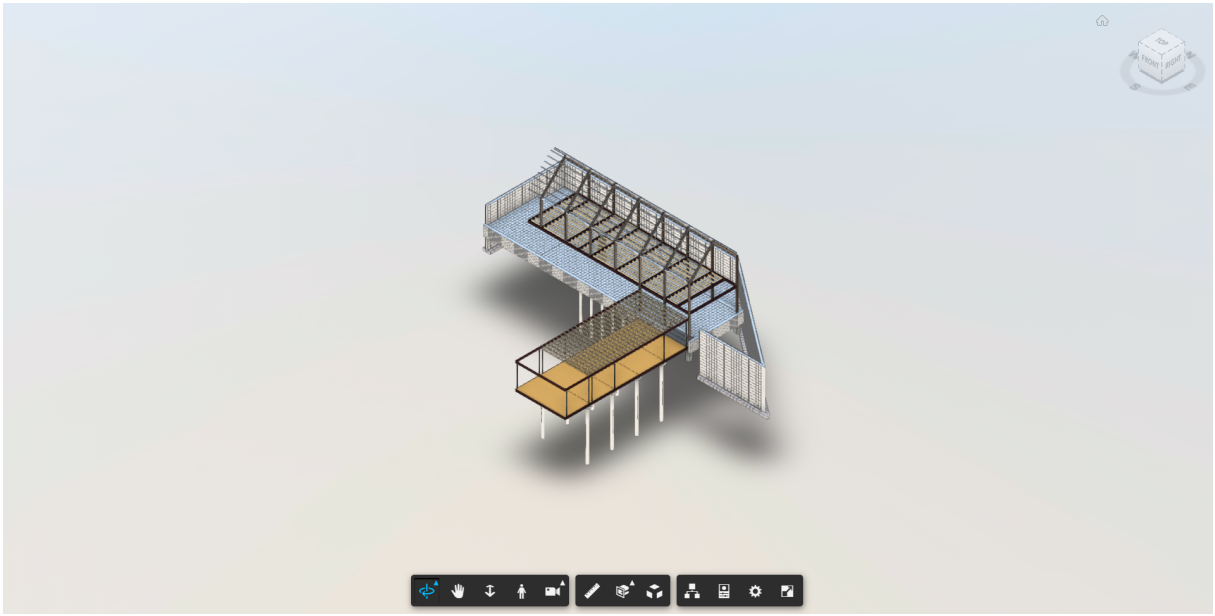
- Orbit (Orbit / Free orbit) - rotate the 3D model

- Pan - grab the 3D model and pan
- Zoom - zoom in / out
- First person - navigate and look around the 3D model
- Measure - measure elements in the 3D model
- Section Analysis - add plan (x / y / z)
- Explode Model - disassemble elements
- Model Browser - choose to show / hide elements in the 3D model
- Properties - properties of the 3D model
- Settings - settings for the 3D viewer
- Full screen - view in full screen mode

At the top right is a menu for orientation with e.g. the following options:

- Front - view the 3D model from the front
- Top - view the 3D model from above
- Right - view the 3D model from the side (right)
- Rotate - rotate clockwise / counterclockwise
- Home - return to original mode

For more information see: https://help.autodesk.com/view/ADSKVIEWER/ENU/?guid=ADSKVIEWER_Help_AutodeskViewerTools_html



# SVF2

Antura IFC Viewer uses Autodesk Forge's latest streaming web format "SVF2" to convert the files.

# Storing files at Autodesk

All files opened in IFC Viewer will be saved in Autodesk's BIM 360 cloud service. The files are stored within the EU with 256-bit encryption (AES-256). For more information see:

https://www.autodesk.com/bim-360/construction-management-software/security/

# Communication with Autodesk

A requirement for IFC Viewer to work is that Antura needs to have access to the Internet and be able to make Web-API calls to https://developer.api.autodesk.com in order to communicate with Autodesk. For on-prem hosting, firewalls and proxies may need to be reviewed for the communication between server and Autodesk.

# Rendering files

If a file has already been converted, the file is opened and displayed without being rendered, Autodesk Forge saves the rendering as long as the file is saved. If a newer version of the file is added, the file will be converted again. For the user, this means that it is faster to open a file if it has already been opened before and thus has already been rendered.

# Supported file formats

Listed below are the file formats supported by Antura IFC Viewer.

3DM, 3DS, A, ASM, ASM.\d+$, BRD, CATPART, CATPRODUCT, CGR, COLLABORATION, DAE, DGN, DLV3, DWF, DWFX, DWG, DWT, DXF, EMODE, EXP, F2D, F3D, FBX, G, GBXML, GLB, GLTF, IAM, IDW, IFC, IGE, IGES, IGS, IPT, IWM, JT, MAX, MODEL, MPF, MSR, NEU, NEU.\d+$, NWC, NWD, OBJ, PAR, PDF, PMLPRJ, PMLPRJZ, PRT, PRT.\d+$, PSM, PSMODEL, RVT, SAB, SAT, SCH, SESSION, SKP, SLDASM, SLDPRT, STE, STEP, STL, STLA, STLB, STP, STPZ, VUE, WIRE, X_B, X_T, XAS, XPR

# Appendix A: Installation manual

*Antura IFC Viewer* is based on Autodesk Forge, a cloud-based platform.

Installation and configuration of the additional product is done by Antura Support.

## Create application in Autodesk Forge

In Autodesk Forge, an application is created for the current customer which has a key (a Client ID and a client secret) which is configured on the Administration page for Add-ons. The application is created in Antura's Autodesk Forge account (a general account managed by Antura).

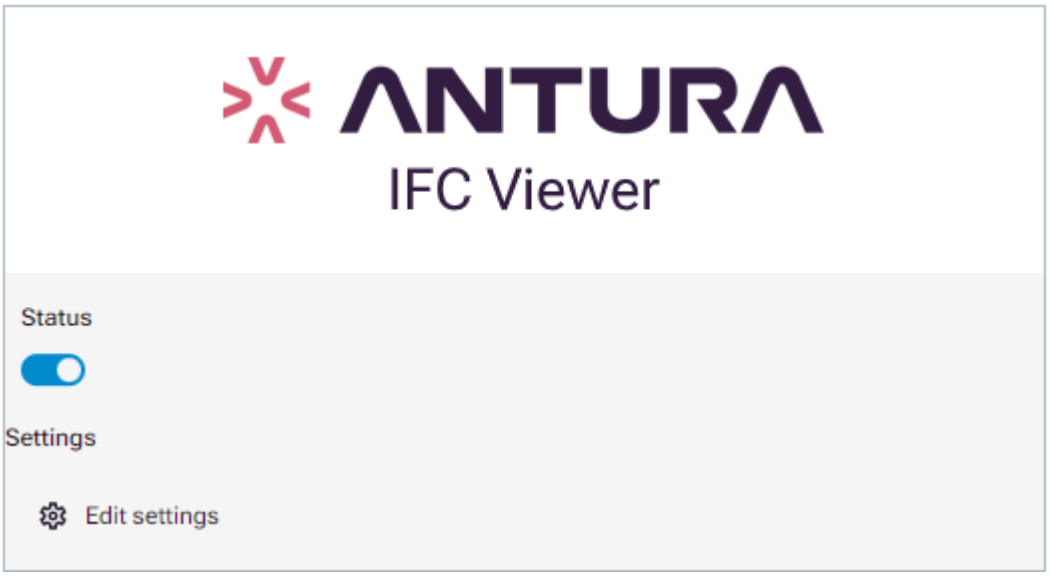
For more information see: https://forge.autodesk.com/en/docs/oauth/v2/tutorials/create-app/

Follow the steps below to create an application in Autodesk Forge:

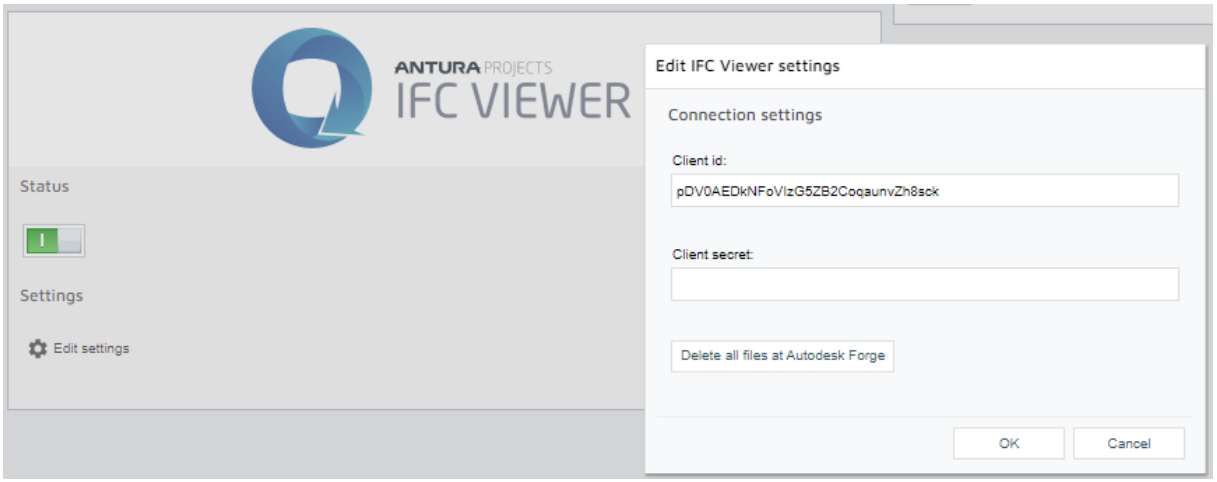
1. Log in to the Forge portal (http://forge.autodesk.com/)
2. In the drop-down list under Profile (top right) select "My apps"
3. Click on "Create App"
4. Check "Data Management API" and "Model Derivative API" (uncheck any other default checkboxes)
5. Name the app with an optional name (it is suggested that it be named with the customer's name)
6. In "Callback URL" a valid URL must be specified even if this is not used by the add-on product, enter for example "https://www.antura.se".
7. Note the customer's Client ID and Client Secret

## Activate Antura IFC Viewer

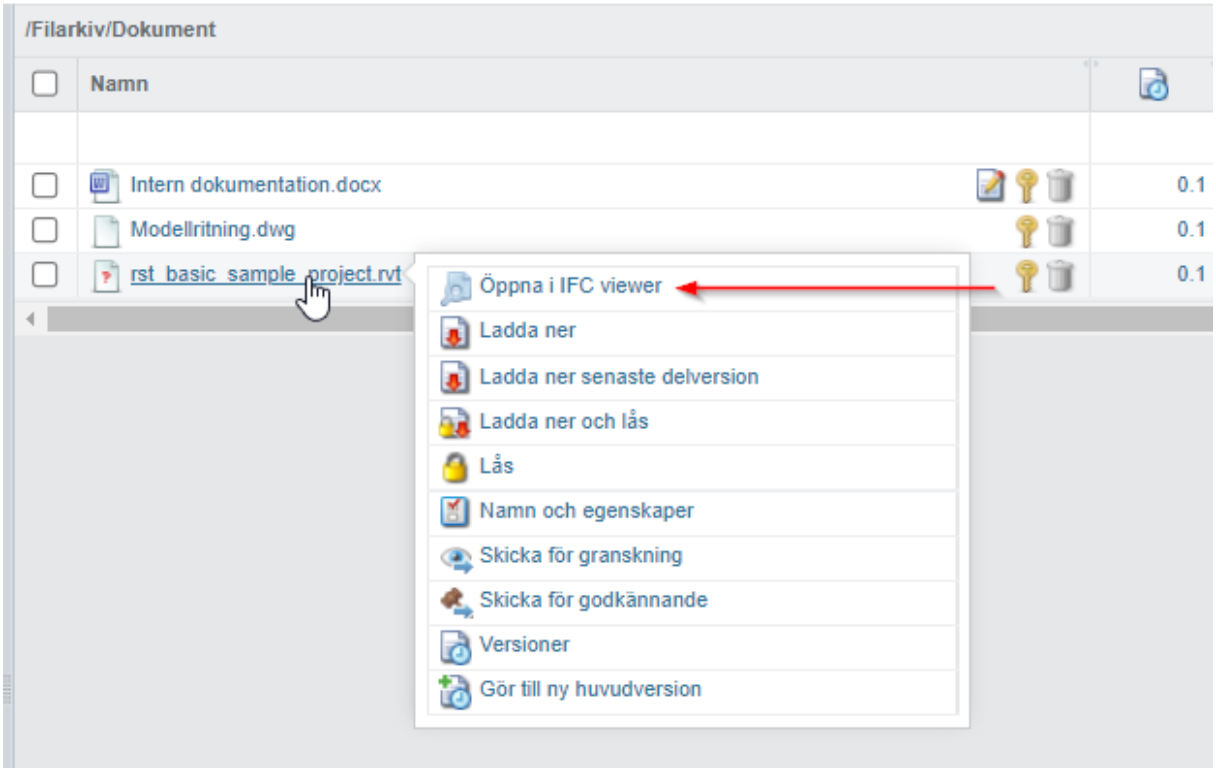
*Antura IFC Viewer* is an add-on product and needs to be activated manually from the Administration - Add-ons view. Activate Antura IFC Viewer via the Status button. The add-on product is then activated for all active users in the customer's system.




Click on "Edit settings" and fill in the customer's Client ID and Client Secret (noted from step above).

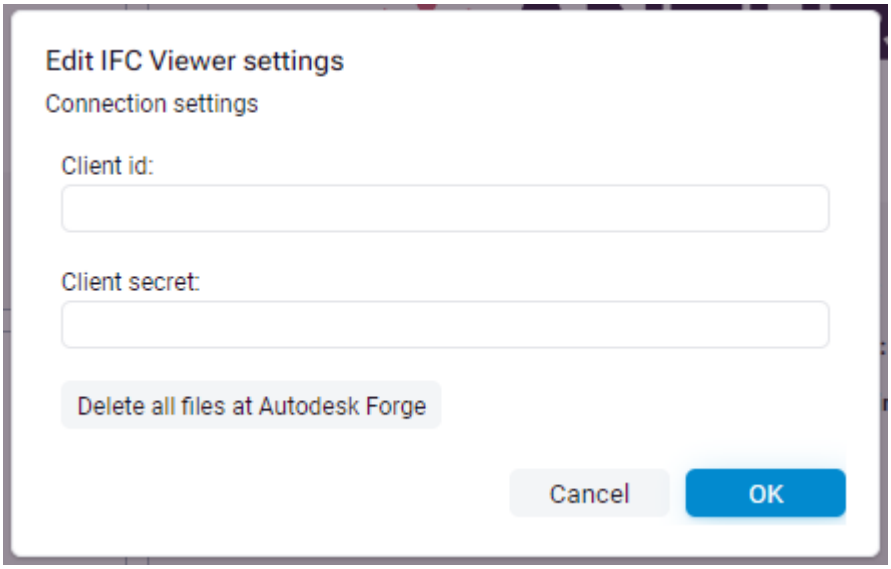



To verify that Antura IFC Viewer is activated, you can check that the menu option "Open in IFC viewer" is displayed when you click on a 2D or 3D file in the file archive (see section “Supported file formats” for file formats that are supported).




# Removal of files

Files uploaded to Autodesk Forge are stored there and speeds up any future conversion. All files in Autodesk Forge can be deleted manually through the "Delete All Files at Autodesk Forge" button in the "Edit Settings" dialog on the administration page of the add-on product.




*Note that after deleting all files at Autodesk Forge, you must re-enter the Client ID and Client Secret in order to create a new "bucket".*

# Appendix B: Frequently Asked Questions

- *What information comes with the file, what metadata is there?
  -

> The name of the file in the Antura file archive (not the path)

- *Is the communication to BIM-360 Server 2 Server?*

> Communication takes place between Antura and the Autodesk Forge server developer.api.autodesk.com without any intermediate instance. The files are stored in Autodesk Forge and translated to Autodesk Forge Viewer's SVF2 format. They are then displayed in the Autodesk Forge Viewer.

- *What does Antura use to get the access token?*

> Get a 2-Legged Token | Authentication (OAuth) | Autodesk Forge

- *For files that take up to an hour to generate, how is this communicated back to Antura OnPrem as no "Callback URL" appears to be used?*

> The Antura client checks against Autodesk Forge every 3 seconds. According to our measurements, the actual conversion to SVF2 rarely takes more than a few minutes, but it can be queue time to convert a file. The second time a file is opened, it is already converted and there is no waiting.

- *Do the files remain on BIM-360 forever or what is retention? Or is it the "Delete all files" function that applies?*

> The files remain forever and the "Delete all files" function is used to terminate the connection with Autodesk Forge, or as needed. As the conversion to SVF2 takes a long time, it is not desirable to redo it with the same file several times.

- *Can we rotate our key with BIM-360 according to our procedures? There is nothing to prevent us from rotating daily?*

> “
>
> Autodesk Forge uses the OAuth 2.0 Client Credentials Grant Flow which means that a pair (Client Id, Client Secret) is a shared permanent secret. Each call to the Autodesk Forge API uses a time-limited token (30 minutes), but (Client Id, Client Secret) is used every 30 minutes to get a new token. Rotation of fixed keys today requires a manual intervention on our part.