



D3PLOT Viewer Documentation

Oasys | LS-DYNA ENVIRONMENT

D3PLOT Viewer Documentation

This document serves as a detailed guide. If you are having trouble using D3PLOT Viewer, or would like to see new features added, please [contact us](#).

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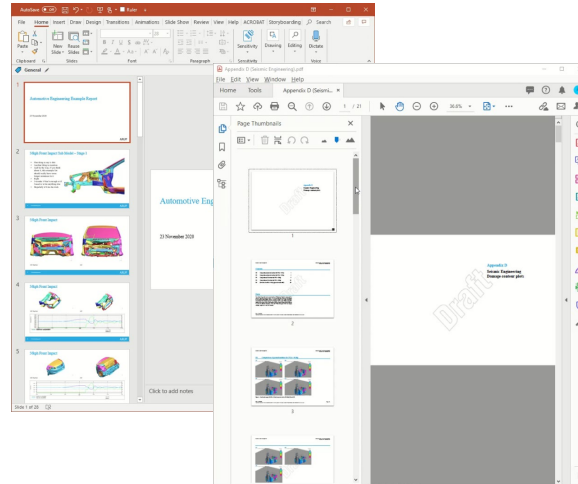


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1 Introduction

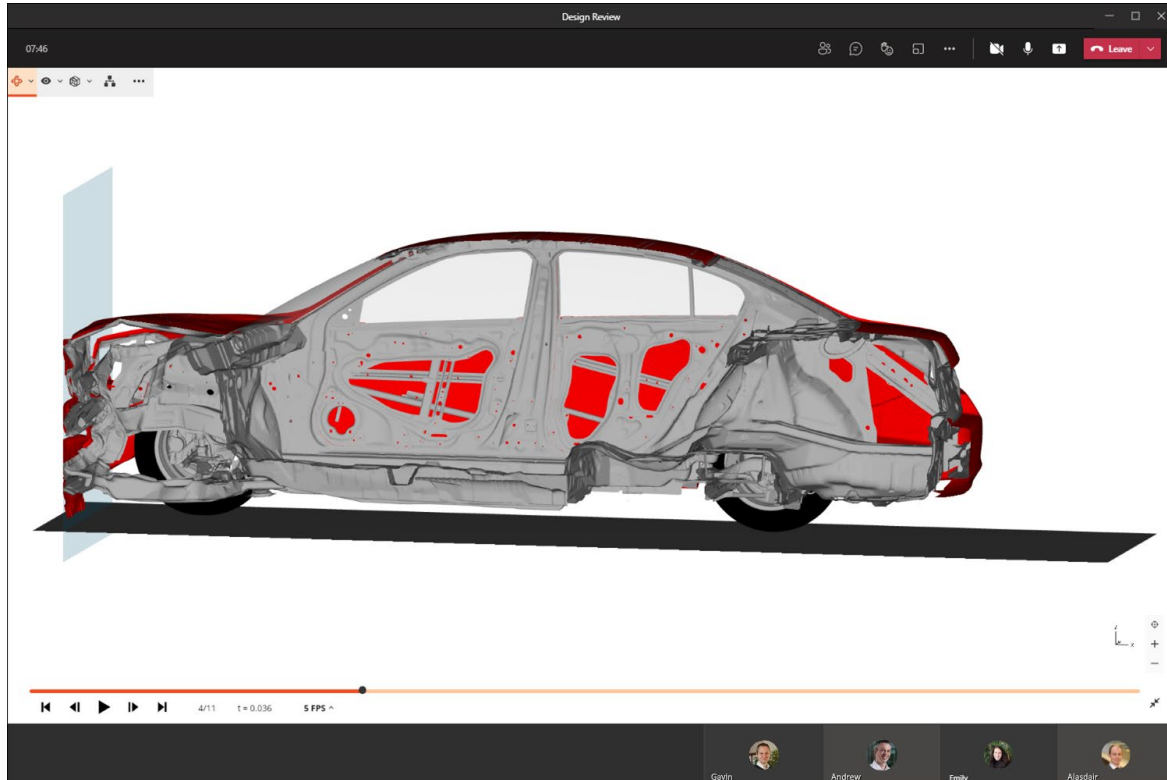
[D3PLOT Viewer](#) is the 3D web viewer for [Oasys LS-DYNA](#) simulations. It has the power to transform the way that you review, communicate, and deliver engineering analysis.

Break free from the 2D confines of traditional reports:

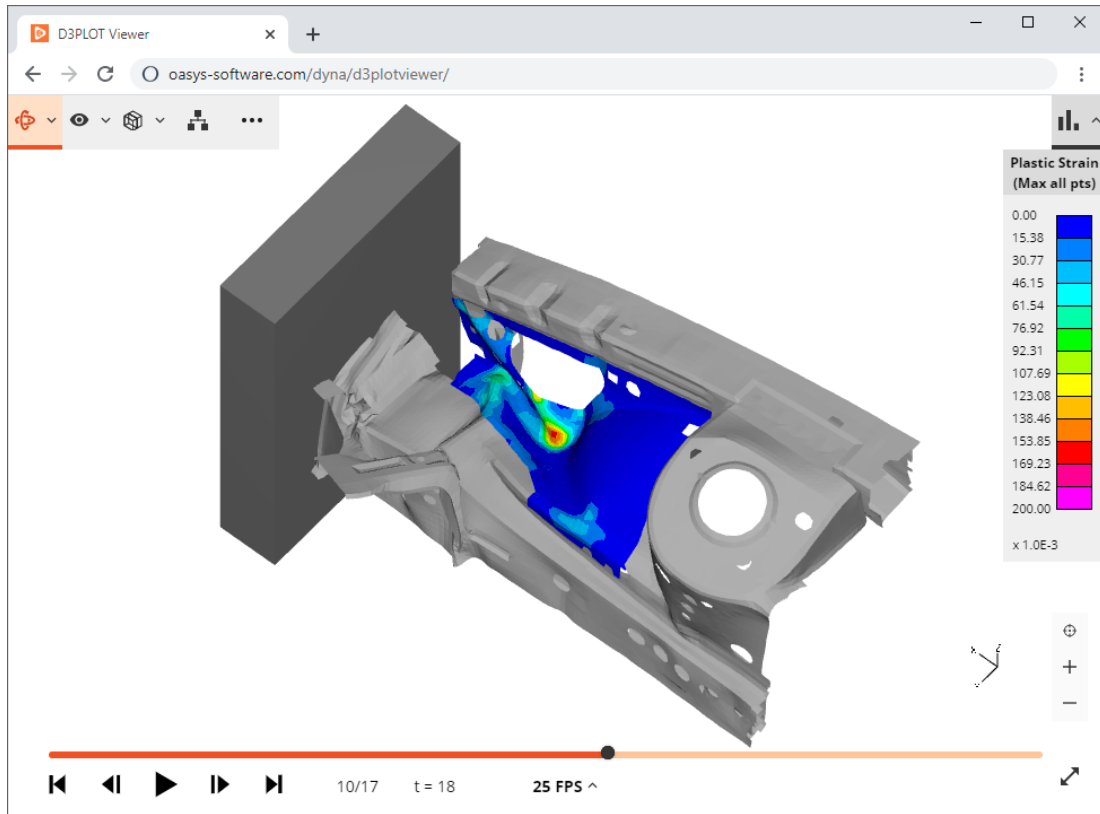


With D3PLOT Viewer, you can:

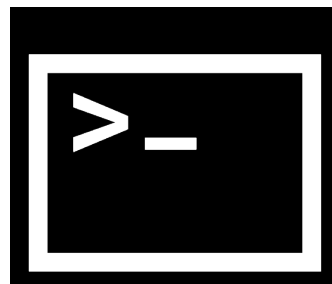
Explore results together in 3D at design reviews and team meetings...



Share animated 3D models with designers and suppliers to help them improve the performance of parts and assemblies...

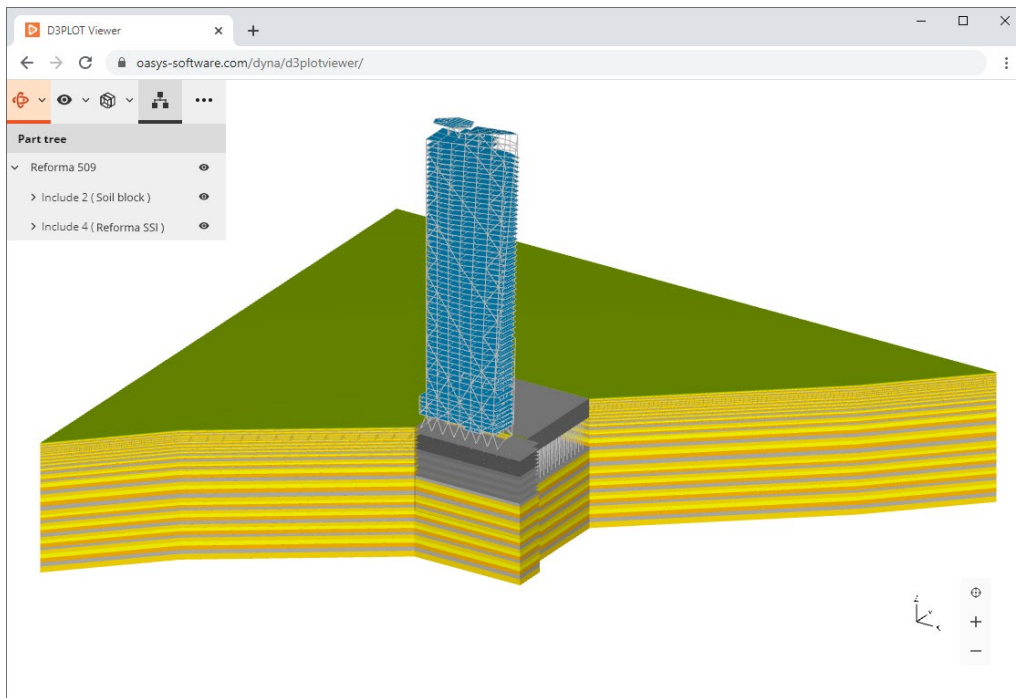


Automatically generate the output files as part of your LS-DYNA job submission – then use D3PLOT Viewer to make a quick check of results as they complete...



```
d3plot18_x64.exe -glb=D3PLOT.glb -states=even -frame_rate=5 d3plot/results.ptf
```

Give your clients added value with 3D project deliverables...



1.1 How it works

- D3PLOT Viewer is free to use – free for your team, your partners, and your clients
- No installation, no registration, no setup required – simply load models and start exploring in 3D
- D3PLOT Viewer reads GLB files, which are generated by [Oasys D3PLOT](#)
- When you open a model in D3PLOT Viewer, all of your model data stays in your browser – it doesn't get uploaded anywhere
- If you need to work offline, you can download the HTML bundle

1.2 Further Advantages

D3PLOT Viewer includes features that are not available in other viewers:

- Animated 3D models
- The ability to blank parts of the model
- Cut sections
- Contoured results data
- Access to the Part Tree

2 Export from D3PLOT

In Oasys D3PLOT, export of GLB files is controlled from the **D3PLOT Viewer** tab on the Images / Media Export panel (**Images** → **D3PLOT Viewer**). To learn more, take a look at the [D3PLOT manual](#).

Once you have exported a GLB file, viewing it in D3PLOT Viewer will give you access to the most features (see [Further Advantages](#)). However, if you export *uncompressed* GLB files from D3PLOT, they are also compatible with many other web viewers, as well as several Microsoft applications, including PowerPoint for Microsoft 365 and PowerPoint 2019 or later.

3 Accessing D3PLOT Viewer

D3PLOT Viewer is free to use – free for your team, your partners, and your clients. There is no installation, no registration and no setup required. Simply open your web browser and get started.

3.1 Online Version

We recommend that you use the online version of D3PLOT Viewer because:

- It is kept up to date with the latest bug fixes and enhancements

The online version of D3PLOT Viewer can be found at:

oasys-software.com/dyna/d3plotviewer

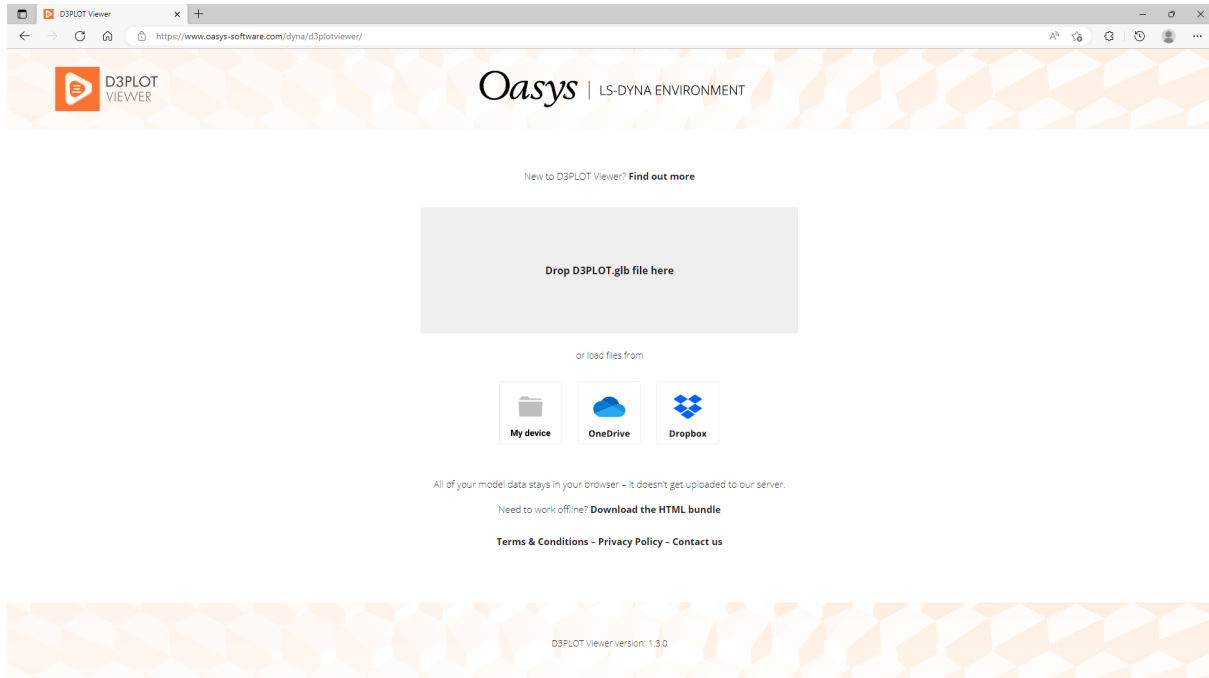
We have also provided an easy-to-remember address, d3plotviewer.com, which redirects to the Oasys software domain.

3.2 Offline HTML Bundle

If you need to work offline, you can download the offline HTML bundle from the link provided on the landing page. The download link will always provide a copy of the latest version of D3PLOT Viewer. All D3PLOT Viewer features are available in the offline version, with the exception of cloud integration (SharePoint and Dropbox).

4 Opening a Model

When you access D3PLOT Viewer, you are greeted with a landing page:



Landing page

3D models are [exported from Oasys D3PLOT](#) as GLB files. You can drag and drop a GLB file into the drop region on the landing page, or load files from various sources.

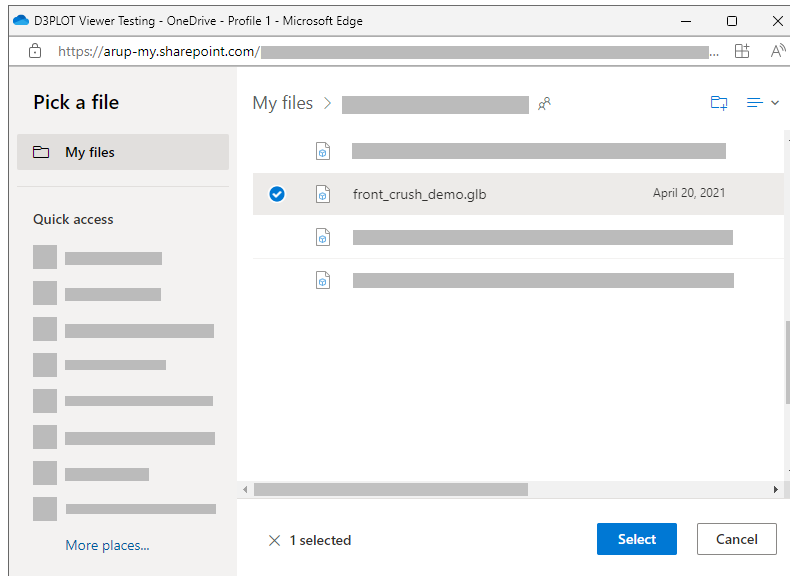
4.1 Load Files from My Device

A file selector will appear, allowing you to select a GLB file from your local disk or any mapped network drive. If you have cloud storage (e.g. OneDrive) mapped to your local file explorer, you can load files from there via My Device, but if you want to create sharing links later, make sure to load the files using the cloud storage option.

The file is loaded into your browser – it does not get uploaded anywhere.

4.2 Load files from OneDrive

Load files directly from your OneDrive/SharePoint cloud storage space using the OneDrive file selector icon on the landing page. In the pop-out window, sign into your Microsoft account and select a GLB file:

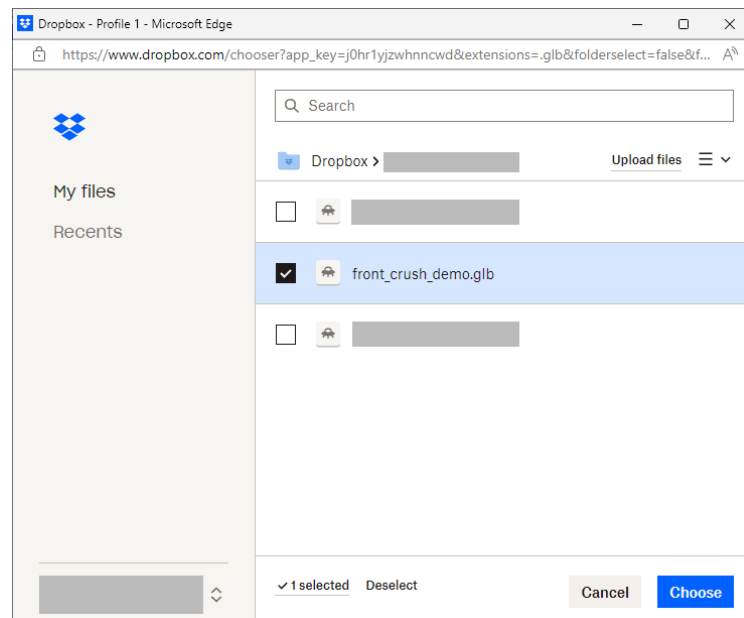


OneDrive file selector

Once you select the file, it is fetched from the cloud and loaded into your browser – it does not get uploaded anywhere. See [File Sharing](#) to learn how to create sharing links.

4.3 Load files from Dropbox

Load files directly from your Dropbox cloud storage space using the Dropbox file selector icon on the landing page. In the pop-out window, sign into your Dropbox account and select a GLB file:



Dropbox file selector

Once you select the file, it is fetched from the cloud and loaded into your browser – it does not get uploaded anywhere. See [File Sharing](#) to learn how to create sharing links.

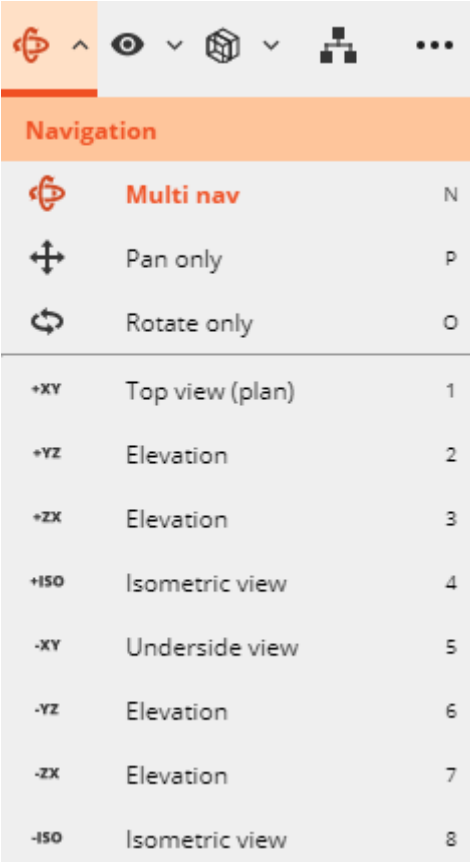
5 Main Controls




D3PLOT Viewer has three modes:



Each mode allows you to interact with the 3D model in a different way. Switch between modes and expand the mode menus to explore their capability.

5.1 Navigation Mode






| Navigation | | |
|---|------------------|---|
|  | Multi nav | N |
|  | Pan only | P |
|  | Rotate only | O |
| +XY | Top view (plan) | 1 |
| +YZ | Elevation | 2 |
| +ZX | Elevation | 3 |
| +ISO | Isometric view | 4 |
| -XY | Underside view | 5 |
| -YZ | Elevation | 6 |
| -ZX | Elevation | 7 |
| -ISO | Isometric view | 8 |

Navigation mode menu

In Navigation mode, you can rotate, pan, and zoom around your model. By default, navigation is in **Multi nav**:

| Mouse | Touch | Action |
|-----------------------------|-------------|-------------------|
| Left-click | One finger | Rotates the model |
| Middle-click | Two fingers | Pans the model |
| Right-click or scroll wheel | Pinch | Zooms the model |

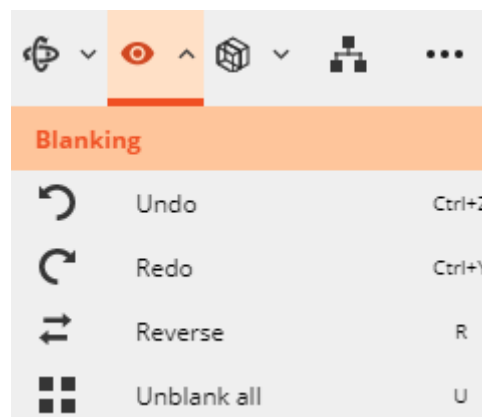
From the Navigation mode menu, you can also switch to **Pan only** or **Rotate only**. In these modes, any mouse button or touch gesture will result in the same action. This could be useful if your mouse/trackpad lacks a middle button, or if multi-touch is not enabled on your device.

-  The auto fit button centres and fits your model within the window.
-  As well as using mouse/touch to zoom, you can use the +/- zoom buttons.
- 

Eight preset views are available in the Navigation mode menu and via keyboard shortcuts 1-8.

5.2 Blanking Mode

In Blanking mode, click/tap parts on the model to blank them. The Blanking mode menu allows you to:



Blanking mode menu

You can also blank and unblank parts and assemblies (include files) from the [Part Tree](#) menu.

If you wish to rotate or pan your model while blanking parts, you can hold the **Shift** key to temporarily switch back to Navigation mode. Alternatively, you can switch to

Navigation mode, move the model, and then switch back to Blanking mode to continue blanking.

5.3 Cut Section Mode

In Cut Section mode, you can apply a cut section to your model to understand what is happening inside. While in Cut Section mode, you can drag the clipping plane's interactive handles to move and rotate the cut relative to your model. You can continue to rotate or pan your model while manipulating the cut section.

You can use the 1-point cut tool to create or translate a cut at a target point. Or use the 3-point cut tool to select three points in model space to set the normal and target of a new cut plane. While the 3-point cut selection is active, hold the **Shift** key to temporarily switch back to Navigation mode to reorient the model.

Update the global cut plane origin coordinates and plane normal vector by inputting new values in the x, y, and z-axis input fields.

Click/tap the Show/Hide plane menu option to change the visibility of the cut plane and interactive handles.

Click/tap the Reflect cut menu option to reflect the local z-axis normal polarity of the cut plane.

Cut section

Alignment

Global

X
Y
Z

Point cut

1-point
3-point

Position and orientation

Origin Coord

Plane Normal

Translate local Z
-
+

Rotate local X
-
+

Rotate local Y
-
+

Show/Hide plane

Reflect cut

Remove cut section





Cut section menu

6 Animation

If your model contains animation data, the animation bar will appear:



The animation controls are:


| | |
|---|---|
|  | Play/pause |
|  | Increment backward/forward one frame |
|  | Skip to first/last frame |
|  | Frames per second (FPS) – adjust the playback speed |



The animation bar also displays the current plot state (frame) number (e.g. 11/17) and the LS-DYNA simulation time (e.g. $t = 20$).

7 Part Tree

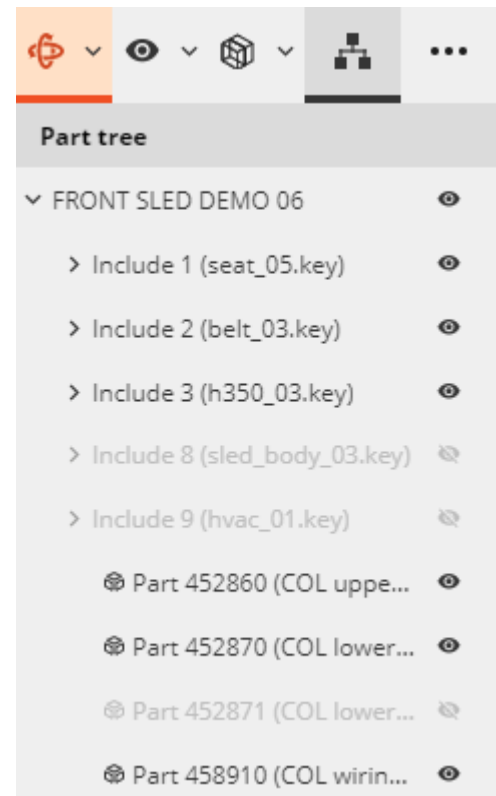
Use the Part Tree to understand the structure of the model, and to focus on individual subassemblies.

Click/tap the Part Tree elements to expand or collapse the tree, revealing lists of Includes and Parts.

Click/tap the  icon to blank and unblank an Include or a Part.

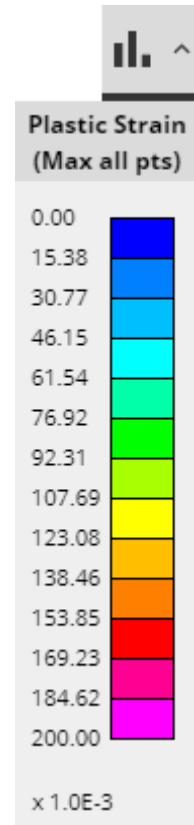
-  Part/Include is visible
-  Part/Include is hidden (blanked)

If a part title is too long to be visible, hover over it (mouse) or long-press it (touch) to display the entire part title.



8 Contour Bar

If your model contains contour data, the contour bar will appear, containing the contour colours, values and data component name as exported from Oasys D3PLOT. Unlike in Oasys D3PLOT, the contour bar values do not update when you change frame or blank parts. The value range will either be an automatic max/min envelope across all frames (if “Auto all frames” or “Auto each frame” was selected during GLB file export) or a user-specified range (if “Max + Min” or “User def” was selected).



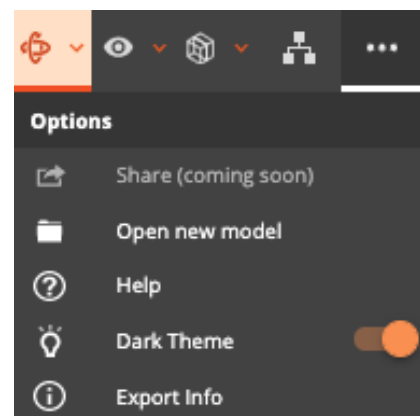
9 Full Screen



D3PLOT Viewer can be viewed in full screen. This is useful when presenting at a meeting, or when you want to maximise the screen area for your model – especially when D3PLOT Viewer is embedded into another web page.

10 Dark Theme

D3PLOT Viewer can be viewed in either light or dark themes. The Viewer theme automatically inherits from your browser – or choose to switch between themes to suit your preference.



Options menu

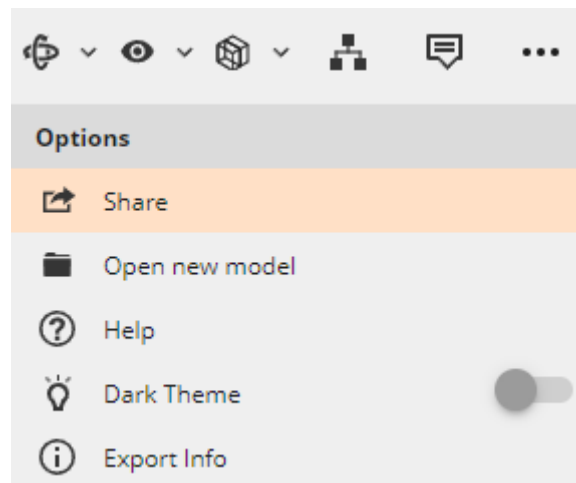
11 Keyboard Shortcuts

D3PLOT Viewer can be controlled with a comprehensive set of keyboard shortcuts, which are listed in a separate document for convenient reference:

[D3PLOT Viewer Keyboard Shortcuts](#)

12 File Sharing

You can create sharing links with D3PLOT Viewer, so that recipients can open your results with a single click. Select **Share** from the **Options** menu:



Share from the Options menu

The file sharing process differs for Microsoft SharePoint and Dropbox.

12.1 Microsoft SharePoint

12.1.1 Overview

In order to share a model (GLB file) using Microsoft SharePoint, you must first [load it from OneDrive](#). Then, the file sharing options available to you will depend on where the file originates. There are three categories of location from which files can be loaded:

1. Your individual OneDrive ("My files")
2. **Public** SharePoint Sites/Groups/Teams within your organisation
3. **Private** SharePoint Sites/Groups/Teams within your organisation

There are two categories of people you may wish to share files with:

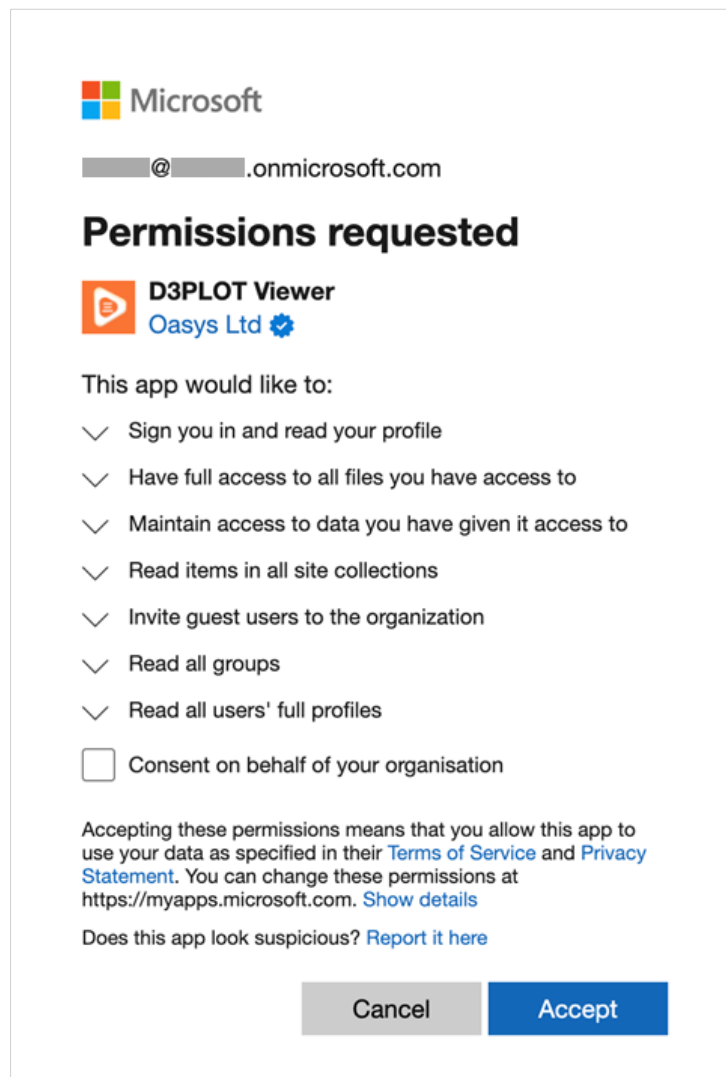
1. Other people within your organisation i.e. within the same domain (technically speaking, within the same Microsoft Azure Active Directory tenant)

2. External guests – these could be other businesses with their own Microsoft tenants, or other guests using non-Microsoft accounts (e.g. Google Mail)

12.1.2 Setup and IT Administrator Approval

In order to enable file sharing with SharePoint, you need to give D3PLOT Viewer various permissions. These are necessary for D3PLOT Viewer to create SharePoint sharing links with access given to the people you specify. We will not carry out any additional activities for any other purpose. Please read our [privacy policy](#) for more information.

If you are the first person in your organisation who tries to share a file with D3PLOT Viewer, you will see the permissions request pop-out window shown below:

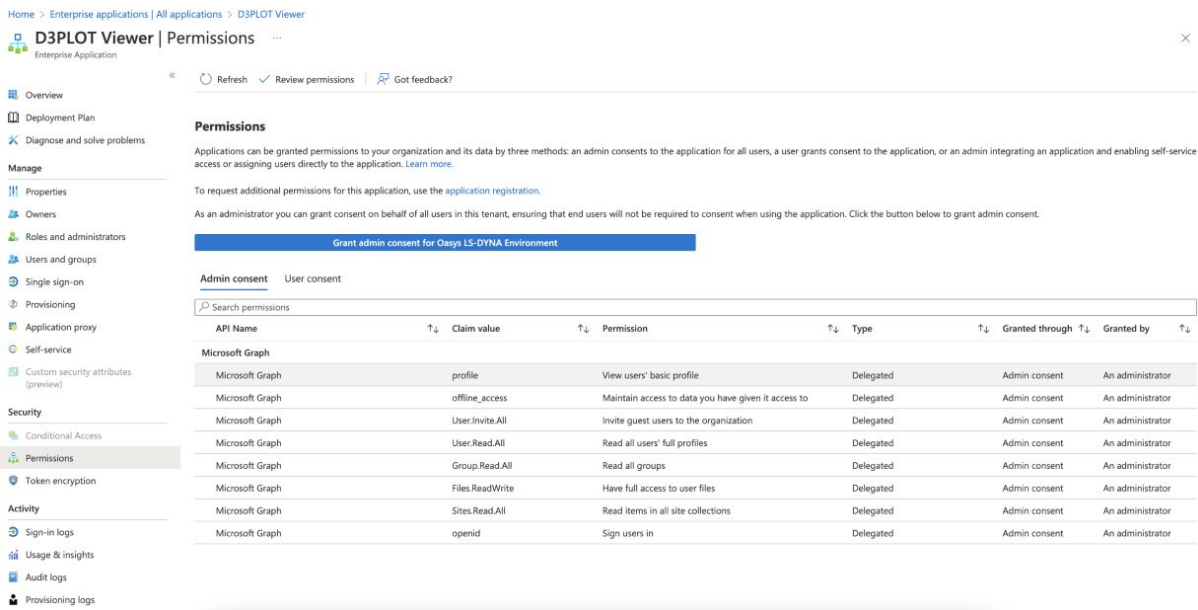


Permissions request

Usually, if you Accept, a notification will be sent to your IT department to grant permissions to the D3PLOT Viewer enterprise application within your organisation's Microsoft Azure portal. We recommend that you also contact your IT department separately to request approval, in case they don't see the notification.

Once one person requests approval, your IT department can approve access for everyone in your organisation at once (“admin consent”), so other people who subsequently share files will not see the permissions request pop-up.

An IT administrator for your organisation’s Microsoft tenant can approve permissions via the Azure Portal under **Enterprise applications** → **D3PLOT Viewer** → **Permissions** → **Grant admin consent for Oasys LS-DYNA Environment**.



Home > Enterprise applications | All applications > D3PLOT Viewer

D3PLOT Viewer | Permissions

Overview

Deployment Plan

Diagnose and solve problems

Manage

Properties

Owners

Roles and administrators

Users and groups

Single sign-on

Provisioning

Application proxy

Self-service

Custom security attributes (preview)

Security

Conditional Access

Permissions

Token encryption

Activity

Sign-in logs

Usage & insights

Audit logs

Provisioning logs

Permissions

Applications can be granted permissions to your organization and its data by three methods: an admin consents to the application for all users, a user grants consent to the application, or an admin integrating an application and enabling self-service access or assigning users directly to the application. [Learn more](#).

To request additional permissions for this application, use the [application registration](#).

As an administrator you can grant consent on behalf of all users in this tenant, ensuring that end users will not be required to consent when using the application. Click the button below to grant admin consent.

Grant admin consent for Oasys LS-DYNA Environment

Admin consent | User consent

Search permissions

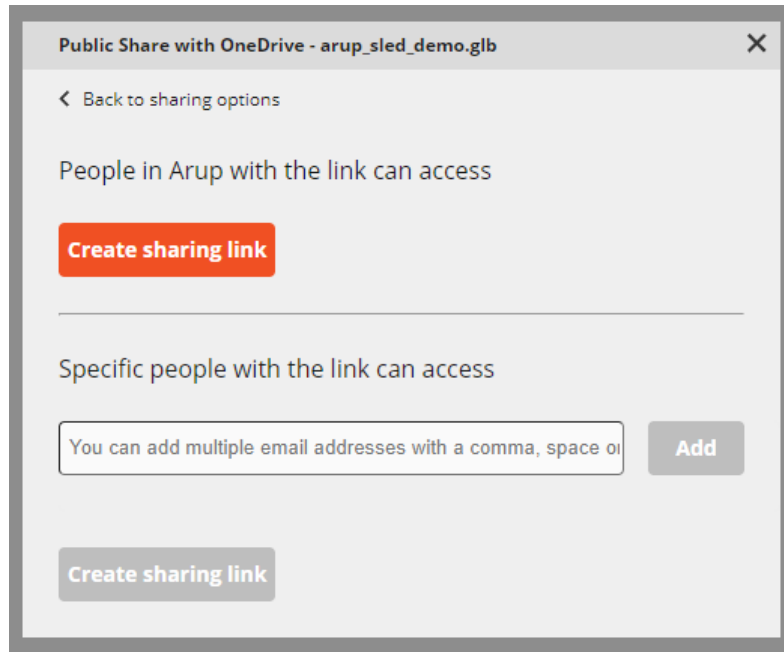
| API Name | Claim value | Permission | Type | Granted through | Granted by |
|-----------------|-----------------|---|-----------|-----------------|------------------|
| Microsoft Graph | profile | View users' basic profile | Delegated | Admin consent | An administrator |
| Microsoft Graph | offline_access | Maintain access to data you have given it access to | Delegated | Admin consent | An administrator |
| Microsoft Graph | User.Invite.All | Invite guest users to the organization | Delegated | Admin consent | An administrator |
| Microsoft Graph | User.Read.All | Read all users' full profiles | Delegated | Admin consent | An administrator |
| Microsoft Graph | Group.Read.All | Read all groups | Delegated | Admin consent | An administrator |
| Microsoft Graph | Files.ReadWrite | Have full access to user files | Delegated | Admin consent | An administrator |
| Microsoft Graph | Sites.Read.All | Read items in all site collections | Delegated | Admin consent | An administrator |
| Microsoft Graph | openid | Sign users in | Delegated | Admin consent | An administrator |

Microsoft Azure admin consent process

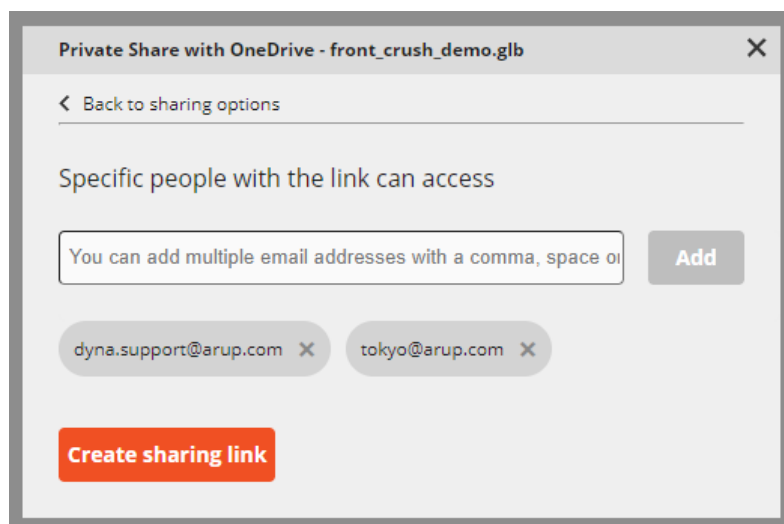
12.1.3 Internal Sharing

Internal sharing is between members of your organisation (Microsoft Azure Active Directory tenant). Available options depend on the location of the file:

- If the file you are sharing is on a **public SharePoint site**, you can choose to create a link that everyone in your organisation can access, or create a link only accessible by specific people
- If the file you are sharing is on a **private SharePoint site**, you can only create a link that can be accessed by specific people



Sharing from a public SharePoint site (in this example, we are sharing from the “Arup” organisation)



Sharing from a private SharePoint site (in this example, we are sharing to specific accounts within the “Arup” organisation)

12.1.4 Sharing with specific people

To share with specific people, enter each person’s email address. Creating the sharing link will grant read permissions to the resource for those members only.

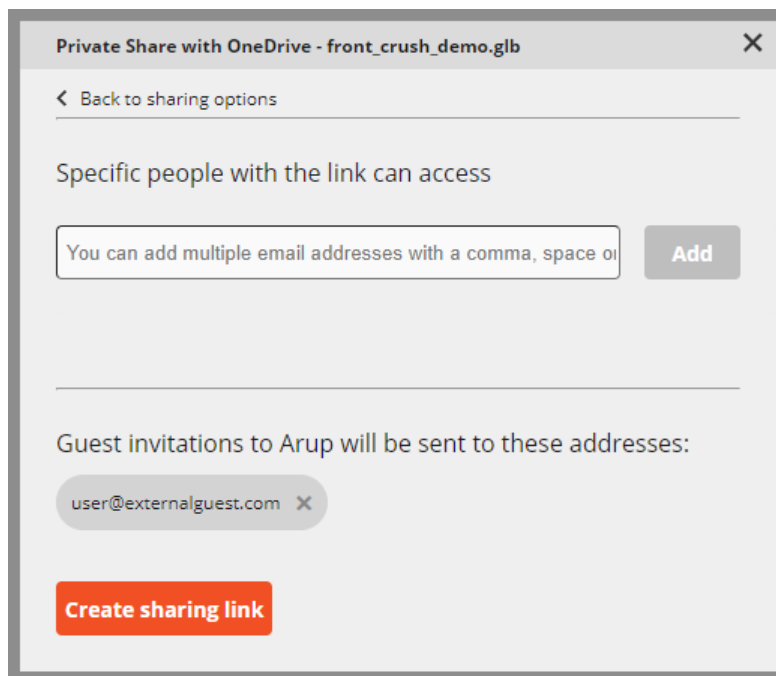
Only when you click to create a sharing link is a member added to the manage access list. If you wish to add another member, you need to create the sharing link again.

For site security, sharing links will only give people access to the files you have shared, and not to any other files or folders in the SharePoint site.

12.1.5 External Sharing

As well as sharing internally within your organisation, if your organisation permits it, you can also create sharing links for external guests – these could be other businesses with their own Microsoft tenants, or other guests using non-Microsoft accounts (e.g. Google Mail).

For external sharing to be successful, your organisation’s Microsoft Azure tenant, its SharePoint root site, and the SharePoint site containing the file, must all have the sharing setting “Allow External Guests”. Note that some organisations choose to “Allow External Guests” for some of the sites within their tenant, but not for the root site. Unfortunately, because of a current limitation with the Microsoft Graph API, D3PLOT Viewer cannot create external sharing links unless your organisation’s **root site** is also set to “Allow External Guests”. Please [let us know](#) if this affects you.



Sharing with specific external guests (in this example, sharing from the “Arup” organisation)

To share with specific external people, enter each person’s email address. When you create a link for external guests, Microsoft will first send a tenant invitation to their mailbox.

The invitation email is a redemption process and must be completed in order for those users to be allowed into your tenant as a guest. Guest users have limited scope by default, and they will not be able to create sharing links themselves or load files directly from the OneDrive picker unless they have an associated Microsoft OneDrive/SharePoint licence.

By default, all other email accounts (e.g. Google Mail) will have read access to the shared resource only.

For site security, guest users only have permission to view the files you share. They do not have access to any other resource within the tenant.

12.1.6 Create Sharing Link

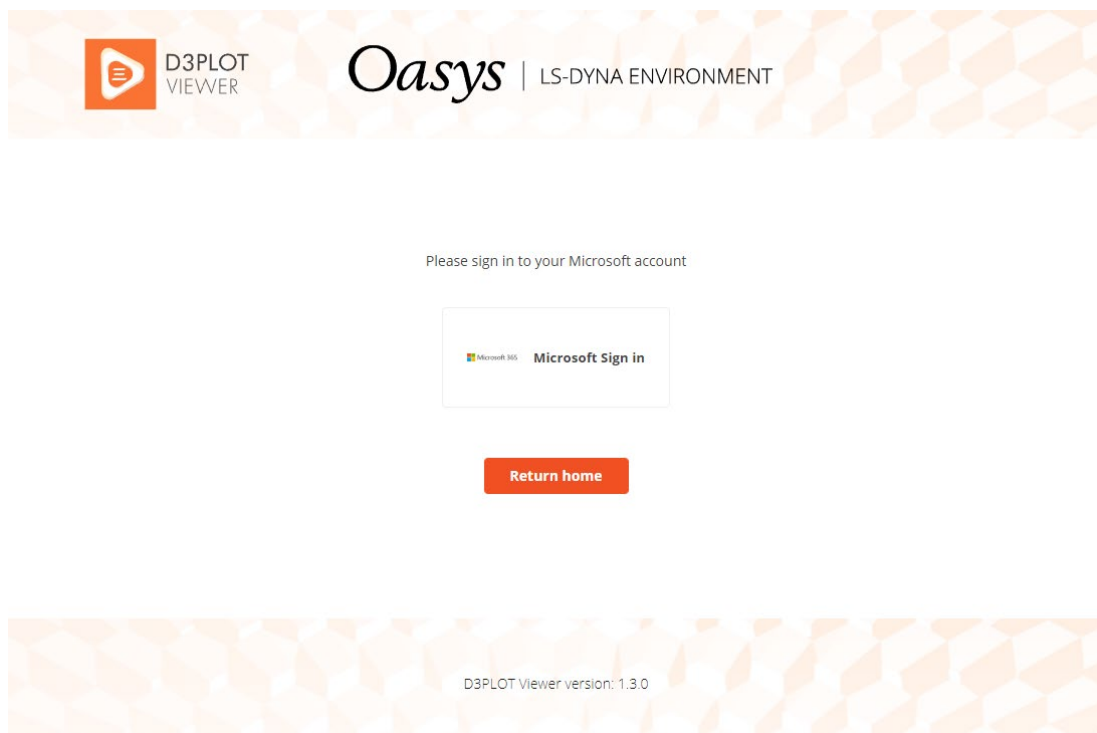
Once a sharing link has been created, you can copy the link and paste it into any communication with your recipients.

The sharing link itself includes the D3PLOT Viewer domain, the organisation tenant ID, and a Microsoft web URL to the resource:

```
https://www.oasys-software.com/dyna/d3plotviewer/  
?tenantID=organisationTenant&sharepointLink=webURLtoResource
```

12.1.7 Consuming Sharing Links

Clicking on a sharing link will open D3PLOT Viewer in your web browser. You will be prompted to sign into your Microsoft account if you are not already signed in. Once signed in, D3PLOT Viewer will automatically download the shared file and load it into your browser.

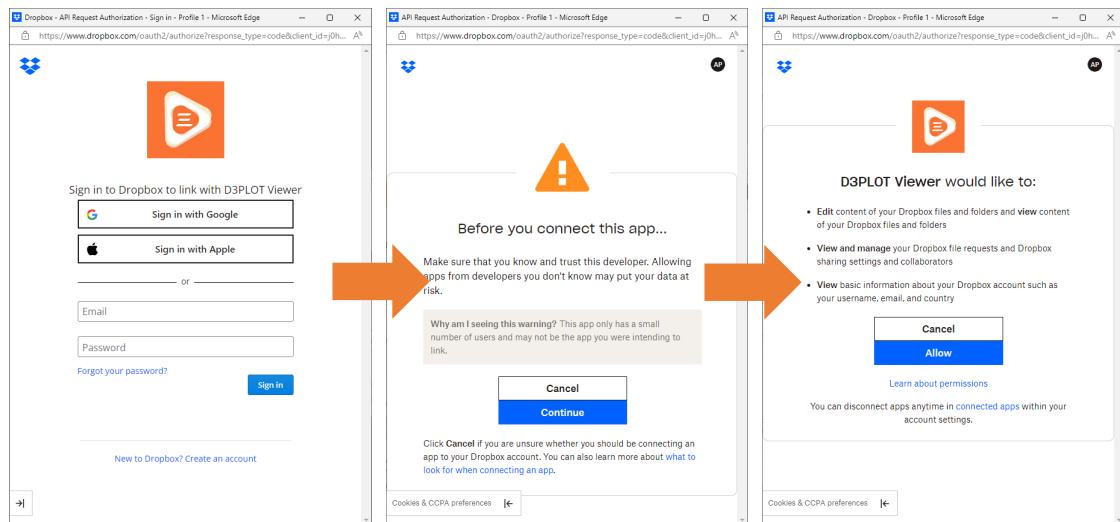


Sign-in prompt when consuming a Microsoft SharePoint sharing link

12.2 Dropbox

12.2.1 App Permissions

In order to enable file sharing with Dropbox, you need to connect your account with the D3PLOT Viewer Dropbox App. You can do this by granting D3PLOT Viewer access during the account onboarding process. Follow the sign-in process in the pop-out dialogue window shown below:



Connect your Dropbox account with D3PLOT Viewer

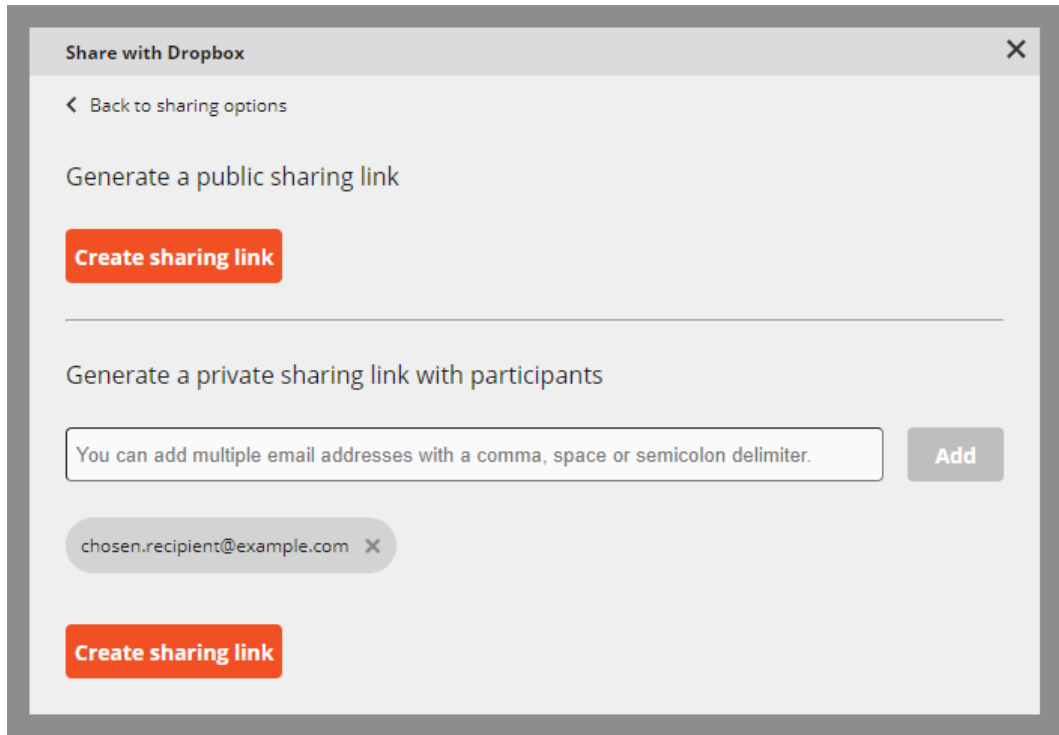
The D3PLOT Viewer Dropbox App requires the following permissions to provide the functionality to share files:

- Edit the content of your Dropbox files and folder and view content of your Dropbox files and folders
- View and manage your Dropbox file requests and Dropbox sharing settings and collaborators
- View basic information about your Dropbox accounts, such as your username, email address and country

We only require these permissions in order to provide file sharing capabilities. We will not carry out any additional activities for any other purpose. Please read our [privacy policy](#) for more information.

12.2.2 Sharing Options

Unlike with OneDrive, Dropbox allows you to share files loaded into D3PLOT Viewer using either [Load files from Dropbox](#) or [Load Files from My Device](#). Models opened from your device will be automatically uploaded to your Dropbox personal environment when you share a file. Files loaded from the Dropbox selector will not be re-uploaded when shared if access to the file space is permissible.



Dropbox sharing options

12.2.3 Public Sharing Links

Create a public shared link for anyone to view a model in D3PLOT Viewer. Anyone with the link can view and download the model GLB file.

12.2.4 Private Sharing Links

Create a privately shared link with specific individuals using their email addresses. You can enter email addresses individually or add multiple addresses using a comma, space, or semicolon delimiter. Note that files directly opened from Dropbox and then shared via D3PLOT Viewer will also inherit any previously shared settings.

12.2.5 Dropbox Team Accounts

Sharing options are inherited from the active Dropbox account and are limited to the privileges set by the account's administrator. Team accounts may have some sharing operations restricted, such as public links.

12.2.6 Opening Dropbox Sharing Links

When you click a Dropbox sharing link, your browser will load the shared model directly into D3PLOT Viewer. Opening private sharing links will trigger the Dropbox sign-on pop-out process to confirm a user has the appropriate access to view the shared model.

13 Embed D3PLOT Viewer

You can now embed the D3PLOT Viewer application into your website using the URL <https://embed.d3plotviewer.com/>.

Implement the embedded viewer endpoint into an iframe, with the source pointing to the available endpoint:

```
<iframe src="https://embed.d3plotviewer.com/" title="D3PLOT Viewer"></iframe>
```

If you would like to provide the facility for users to use scrollable mouse controls such as zoom within the iframe, include the over scroll behaviour contain style tag. In addition, to support full screen mode, include the following tags:

```
<iframe src="https://embed.d3plotviewer.com/" title="D3PLOT Viewer" allowFullScreen="true" webkitallowfullscreen="true" mozallowfullscreen="true" style="overscroll-behavior: contain"></iframe>
```

14 Troubleshooting

This section covers some common problems encountered when using D3PLOT Viewer. If you have trouble using D3PLOT Viewer, we would like to hear from you. [Contact us](#).

14.1 Browser Compatibility

D3PLOT Viewer will alert you if you try to use an unsupported browser, and there is some additional advice below. If you find that model behaviour or user interface don't work as expected in your browser, please [let us know](#).

Google Chrome

D3PLOT Viewer should work on Chrome version 80 or later.

Microsoft Edge

D3PLOT Viewer should work on Edge version 80 or later.

Mozilla Firefox

D3PLOT Viewer should work on Firefox version 80 or later.

Apple Safari

D3PLOT Viewer should work on Safari version 11 or later.

Microsoft Internet Explorer

D3PLOT Viewer doesn't work on Internet Explorer, and we don't intend to try to make it work. We recommend you use one of the other browsers instead.

14.2 GLB File Loading Errors

If you encounter an error when attempting to open a GLB in D3PLOT Viewer, there are various possible reasons:

14.2.1 File Size

The maximum size of model you can open in D3PLOT Viewer is limited by web browser constraints. At the time of D3PLOT 19.1 release, D3PLOT Viewer has the following limits:

| File Format | Maximum file size |
|------------------|--|
| GLB (compressed) | Approx. 4 GB uncompressed data – typically results in a GLB file of < 1 GB |
| GLB uncompressed | 2 GB |

We will continue to work on ways of increasing these limits.

What does this mean?

You might not be able to view 50+ plot states of a full vehicle crash simulation. But you will probably be able to view 10-20 plot states of a full vehicle, or more plot states of a subset of the model. It all depends on the model size, and whether you include contour data. We encourage you to explore what is possible for you – and send us feedback!

Are file size limitations causing you problems with D3PLOT Viewer? [Let us know](#).

14.2.2 Incompatible GLB File

D3PLOT Viewer can only load files created by [Oasys D3PLOT](#). If you try to load a GLB file created elsewhere, you will receive an error message.

Would you like to use D3PLOT Viewer for other GLB files? [Contact us](#).

14.3 File Sharing Errors

14.3.1 Microsoft OneDrive/SharePoint

If you encounter any issues with file sharing via Microsoft OneDrive/SharePoint, please first check with your IT administrators regarding [initial setup](#) and [external sharing](#). If you still have problems, please [contact us](#) – we want to make sure sharing works for you.

14.3.2 Dropbox

If you encounter any issues with Dropbox sharing, please [contact us](#).