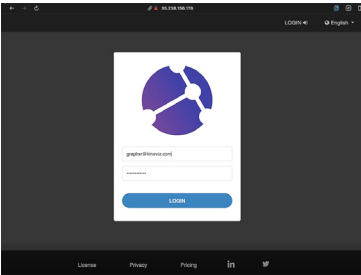




GraphXR Explorer for Spanner is a workspace for property graph visualization and analytics. Connect Spanner Graph databases to an Explorer project, run no-code queries, and explore the graph without moving or replicating data.

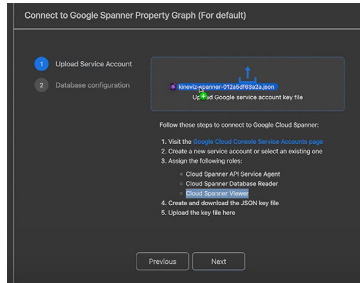
1. Launch from GCP Marketplace

1. Open the [GraphXR Explorer](#) product page
2. Click **Launch** to configure a deployment.
3. Enter a Deployment name.
4. Create a Service Account: under **Deployment Service Account**, click **New Account**. Enter
 - Service account name, ID and description.
 - Zone (us-central-c)
 - Under **Firewall**, click **Allow HTTP** and **Allow HTTPS** checkboxes.
5. Click **Deploy** and wait for deployment to complete.
6. Open the deployment **Details** tab and locate **Outputs**
 - Copy the **Admin Password** (click the Copy Link icon)
 - Click **Site URL** to open GraphXR Explorer login.
7. Log In to GraphXR Explorer
 - Enter your user ID and Admin Password, and click **Login**.
 - A GraphXR Explorer project is created, but is not yet connected with a specific database.



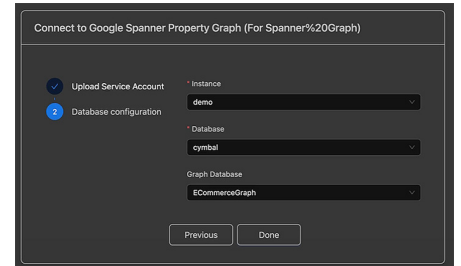
2. Obtain and upload a service account key

- The connection wizard links to your Google Cloud account, and lists steps to connect to a Spanner Graph database.
1. Click the link to visit the Google Cloud Console **Service Accounts** page.
 2. Open the service account created for the project (or create a new one).
 3. Under **Permissions**, assign 3 roles:
 - Cloud Spanner API Service Agent
 - Cloud Spanner Database Reader
 - Cloud Spanner Viewer
 and click **Done** to return to the Service Accounts page.
 4. Create and download the JSON key file
 - Click the 3 dots at the far right on the service account list item, and choose **Manage Keys**.
 - Click **Add Key**, and choose **Create New Key**, select **JSON** and click **Create**.
 5. Drag the downloaded key file to the connection wizard to upload, and click **Next**.



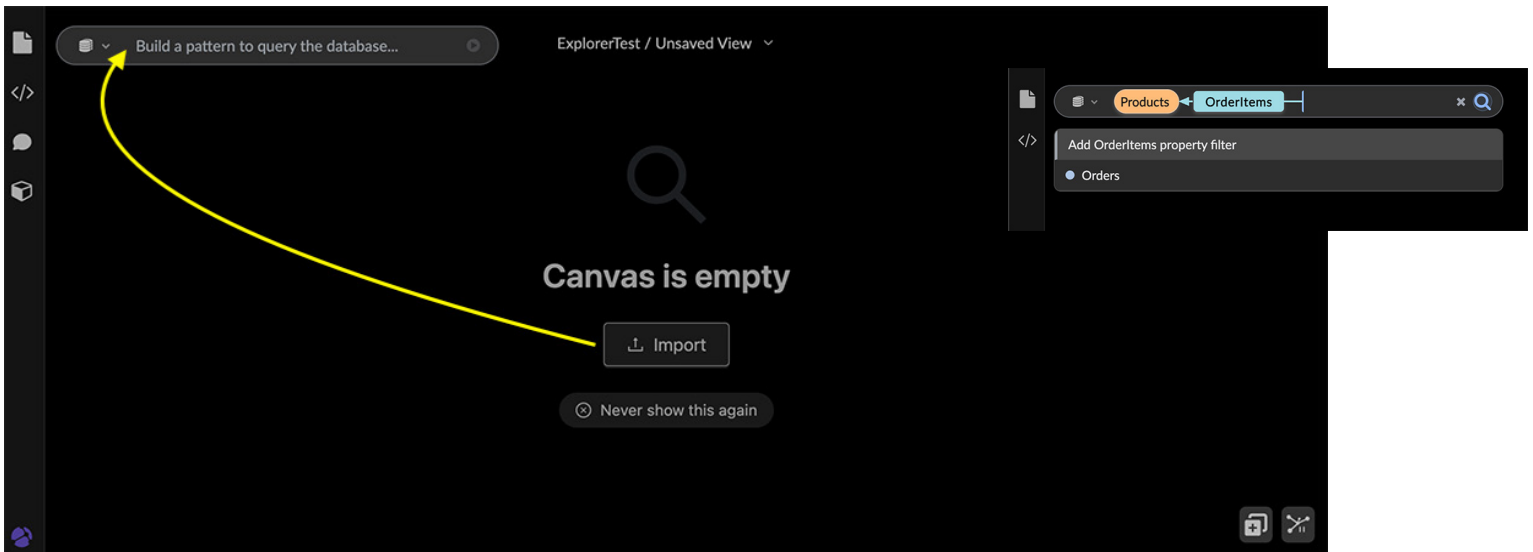
3. Review database configuration

- Database details are pre-filled.
1. Review to make sure the project will be connected to the expected database.
 - **Instance**,
 - **Database** name and
 - **Graph Database**
 2. Click **Done**.



The GraphXR Explorer project is now connected to the database.

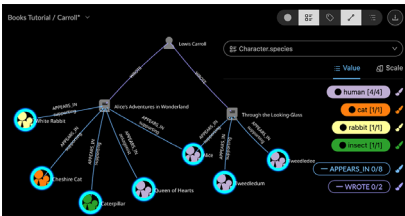
- The project canvas is empty when it first opens.
- To import data from the connected database, click in the Query bar to use GraphXR's point-and-click query builder.



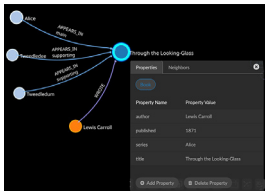


The Property Graph

- **Nodes** labeled by **Category**
- **Edges** labeled by **Relationship** and source and destination nodes.
- **Properties** of Categories or Relationships as **Property Name - Property Value** key-value pairs. To work with properties:
 - In the Legend, click **Property** for selectable lists of nodes or edges with unique property values.



- Double-click a node or edge for editable property **Information**.



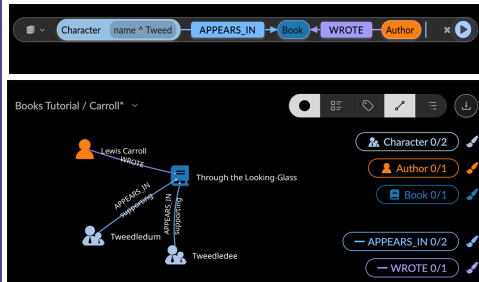
- Open a **Table** of nodes (or edges) for a category (or relationship).
- Set property values as captions on nodes and edges.

Query the Graph Database

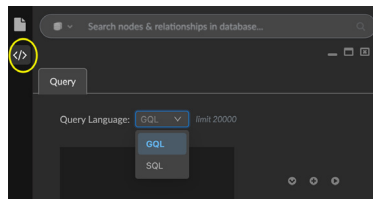
- **Build and Run a no-code Query**
1. Click in the Query/Search bar & choose Categories, connected Relationships and (optional) property value filters.



2. Click the query icon to run the query.



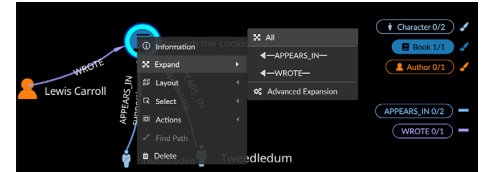
- **Enter and run a GQL or SQL query**
1. Open the **Query** panel.
 2. Select **GQL** or **SQL**
 3. Enter a query, and click the **Run** arrow.



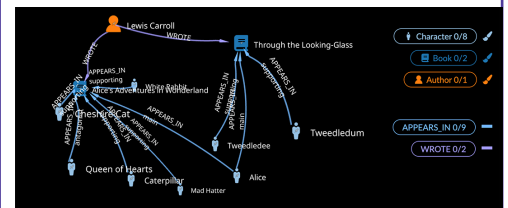
Expand with Relationships

- The **Expand** function queries for nodes in the database connected through one or more relationships to nodes already on the project canvas.

1. Select one or more nodes on the canvas.
2. Right-click and choose **Expand**.

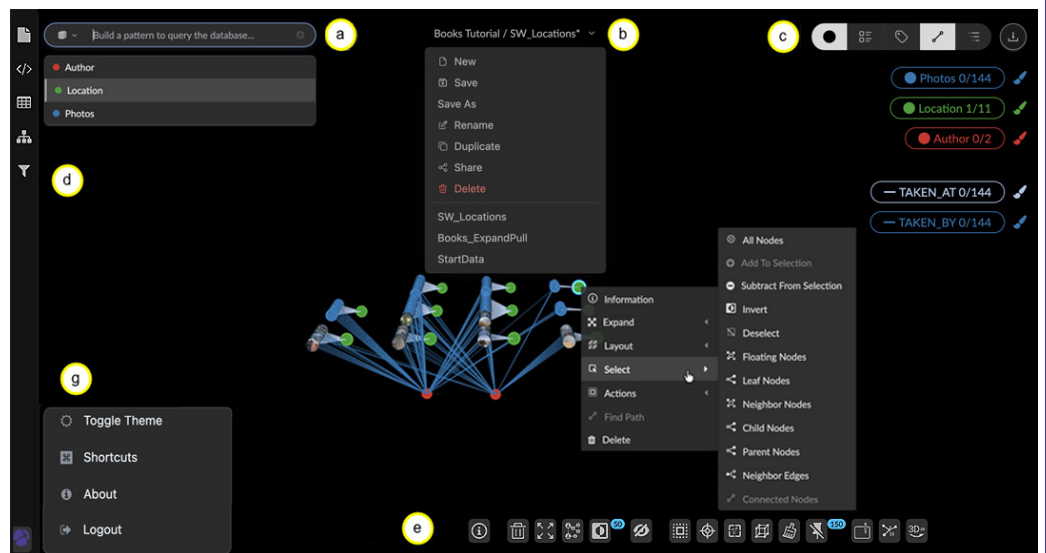


3. Choose
 - a single relationship to expand on
 - **All**,
 - **Advanced Expansion**, for more control



The Project Workspace

- Query Bar**
- View Menu**
Save, Load, Rename, Duplicate, Share, and Delete Views
- Legend**
Select and Style by Category, Property, and Relationship
- Panel Menu**
Project, Query, Table, Layout, Filter
- Contextual Toolbar** icons
Toolbar only: Select Visible, Hide, Show Hidden, Center To, Fly Out, Quick Info, 2D/3D toggle.
- Right-click menu**
Expand, Layout, Select, Actions, Find Path, Delete
- Kineviz Logo Menu**
Toggle Theme, Shortcuts, About, Logout

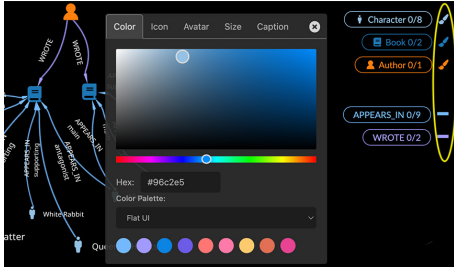




Style Nodes and Edges

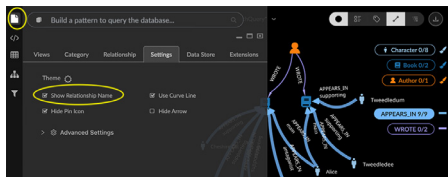
• Legend - Style Setting Dialog

1. Click the icon next to a category, relationship, or property.
2. Set **Color, Icon, Avatar, Size, Captions**



• Project>Settings

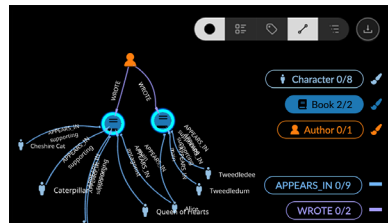
- Show Relationship Name checkbox



- **Advanced Settings** dropdown
- **Node or Edge size scale**
- **Caption position**

Navigate and Select

- **Pan, Zoom, Rotate, Select, Undo/Redo**, etc. Select **Shortcut** on the Kineviz logo menu for shortcut key reference.
- **Legend Selection** by category, property value or relationship. Click an item in the Legend list to select the nodes (or edges).



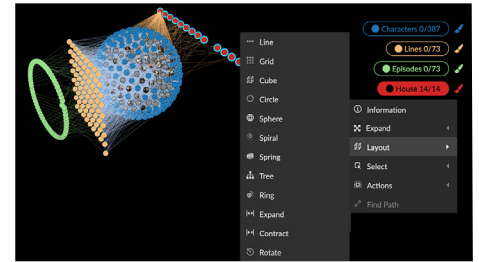
- Right-click **Select** and **Action** menus
 - > **Select**
 - **All Nodes, Floating** nodes, or **Leaf** nodes
 - **Invert** or **Deselect** current selection
 - **Neighbor, Child, Parent** nodes, or **Neighbor edges** of selected nodes
 - **Connected** nodes of selected edges
 - > **Action**
 - **Pin** or **Release** pinned nodes
- **Toolbar-only actions**
2D/3D toggle, Quick Info toggle, Clear Graph, CenterTo, FlyOut, Select Visible, Hide, Show Hidden, Trace Neighbor, Delete Selection.



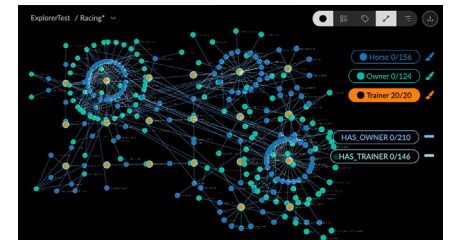
Lay Out the Graph

• Geometric layout

1. Select nodes to lay out
2. **Right-click>Layout**, and choose
 - **Line, Grid, Cube, Circle, Spiral, Sphere**, or **Spring** layout.



- Hierarchical **Ring** or **Tree** layout, centered on the nodes you selected.

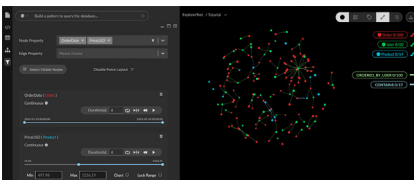


- **Expand** or **Contract** node spacing
- **Rotate** a selection counterclockwise 90 degrees

Filter and Focus

• Filter on Property Values

Open the **Filter** panel and choose node or edge property values to filter.



• Isolate subgraphs

Right-click>**Select>Neighbor, Child, Parent** nodes, **Neighbor edges** of selected nodes, and/or **Connected nodes** of selected edges

• Find and Isolate a Path

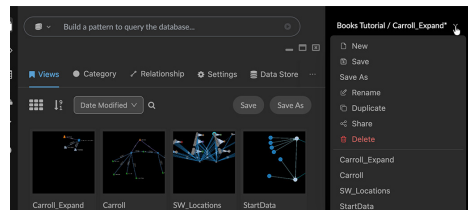
1. Select two nodes (click, then ctrl-click)
2. Right-click>**Find Path**



3. Click toolbar **Invert** and **Hide Selection** icons to hide data not on the path.

Save Graph Views

- **Save a View** from the view menu
 - **Save**, or **Save As** saves the current view.
 - **New** clears the graph & creates a new empty view.
- **Load a saved view** from the view menu



• Manage Saved Views

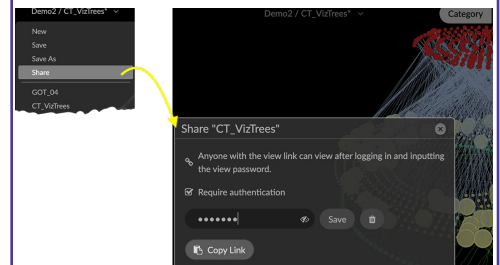
Open the **Project** panel and **Views** tab.

- Display as tiles or as a list.
- Sort by name, date created or date modified.
- Search for a view. Click the search icon to filter on view name.
- Share, Delete, or show view Information.
- Edit a view name.
- Click a tile or list to load a view to the canvas.

Share a View

• Share the view on the project canvas

1. Choose **Share** on the view menu.
2. Optionally, require authentication and enter a password.
3. Click **Copy Link**, and send it and the password (if any) to your colleagues.



• Share a saved view

1. Open the **Project** panel and **Views** tab, locate the view, and click its share icon.
2. Complete steps 2 and 3 above.



Shortcut Keys for Navigation, Selection, and Editing

| Action | Shortcut | Action | Shortcut |
|---|--|---|--------------------------------------|
| Delete selection | delete | Select all nodes | ctrl+A |
| Clear graph | ctrl+shift+C | Deselect all nodes | alt+A OR double click empty space |
| Undo | ctrl+Z | Select a node or edge | left mouse click |
| Redo | ctrl+Y | Select multiple nodes and edges | shift+left mouse click-drag |
| History | ctrl + shift + H | Add a node to a selection | ctrl+left mouse click |
| Save | ctrl + S | Add multiple nodes to a selection | ctrl+left mouse click-drag |
| Pan | left mouse click-drag OR 1+Left mouse click-drag | Subtract a node from a selection | alt+left mouse click |
| Zoom | mouse wheel OR 2+left mouse click-drag | Subtract multiple nodes from a selection | alt+left mouse click-drag |
| Fast zoom | ctrl+mouse wheel | Select all orphaned (floating) nodes | shift+D |
| Fly Out (Reset view) | alt+shift+R | Invert selection | I |
| Center on a selected node | c+left mouse double click | Invert selection for selected node categories | shift + I |
| Rotate (Manual) | right mouse click-drag OR 3+left mouse click-drag | Toggle Leaf Trimming | ctrl+L |
| Toggle Rotate (Automatic) | ctrl+O | | |
| Toggle Orbit (Automatic) around x- axis | ctrl+alt+shift+o | Full Screen | ctrl+F |
| Toggle Orbit (Automatic) around y- axis | ctrl+o | Hide menu | esc |
| Toggle Orbit (Automatic) around z- axis | ctrl+shift+o | | |
| Stepwise Move | Arrow key click (right, left, up, or down) | | |
| Move a selection | right mouse click-drag | | |
| Toggle Pin / Release | ctrl+P | | |
| Information | ctrl+I OR left mouse double click | | |
| Expand with Relationships | ctrl+X | | |
| Display Enhanced Table | shift + T | | |
| Run Degree Centrality Algorithm | shift + ctrl + D | | |
| Toggle Encrypt/Decrypt Text Property Values | shift + E | | |