GraphXR Explorer for Spanner
Intuitive Graph Visualization and Analytics

Quick Start

GraphXR Explorer for Spanner provides property graph visualization and analytics in a collaborative workspace. In minutes and with no need to replicate or move data, securely connect Spanner to a GraphXR project, build and run graph queries, and explore a visual graph.

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.
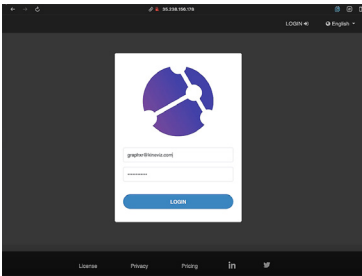
2. Obtain and upload a service account key

- 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**.
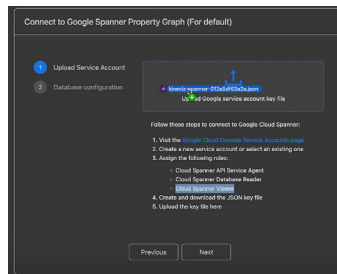
3. Review Database Configuration

- Database details automatically appear in the configuration dialog.

1. Review to make sure the project will be connected to the expected database.
   - **Instance**,
   - **Database** name and
   - **Graph Database**
2. Click **Done**.
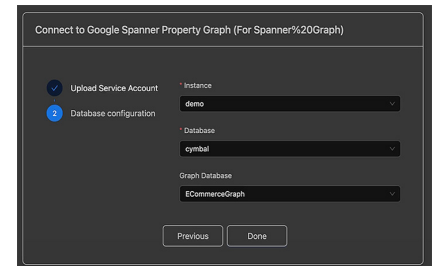
The GraphXR Explorer project is now connected to the database.

- The project canvas is empty when it first opens.
- To import data from the connected database, click in the Query/Search bar to use our point-and-click query builder.
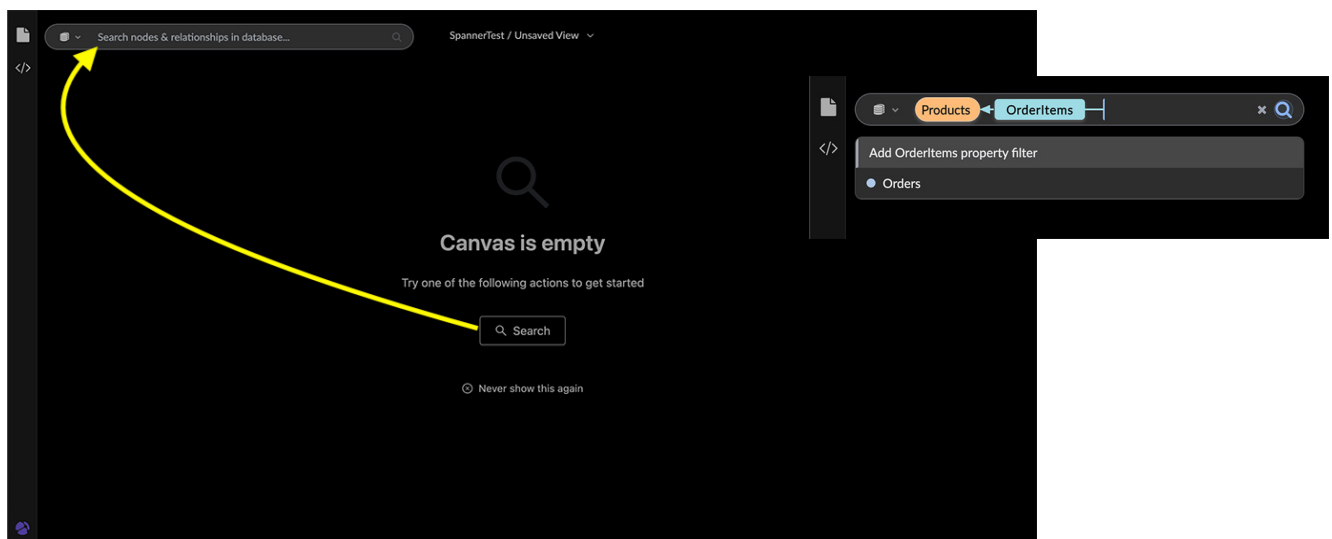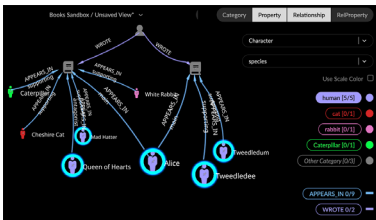
The Property Graph

- **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 view and work with properties:
  - In the Legend, click **Property** for selectable lists of nodes or edges with unique property values.

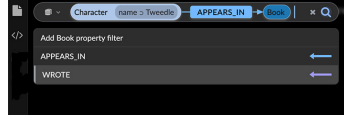 - Double-click a node or edge for editable property **Information**.
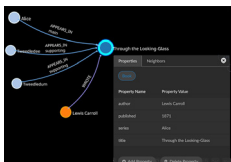
  - Open a **Table** of nodes (or edges) for a category (or relationship).
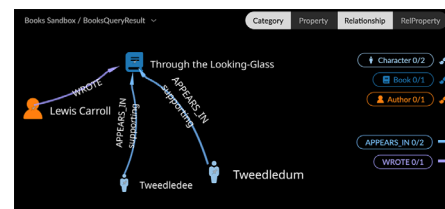 - Set property values as captions on nodes and edges.

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.
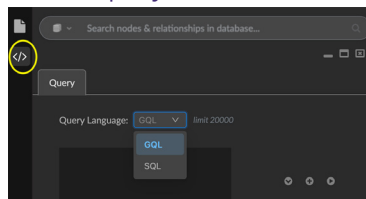

2. Click the query icon to run the query.
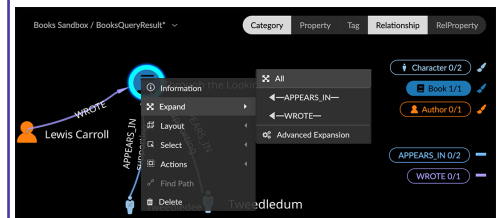

- **Enter and run a GQL or SQL query**
1. Open the **Query** panel.
2. Select **GQL** or **SQL**
3. Enter a query, and click the **Run** arrow.

Expand with Relationships

- The **Expand** function queries for nodes in the database that are connected through one or more relationships to nodes that are 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**, or
   - **Advanced Expansion**, for more control
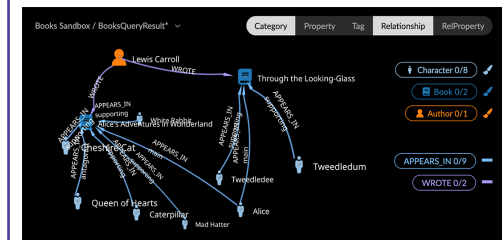
The Project Workspace

a. **Query/Search Bar**
b. **View Menu**
   Save, Load, and Share Views
c. **Legend**
   Select and Style by category, property, and relationship
d. **Panel Menu**
   Project, Query, Table, Layout, Filter
e. **Contextual Toolbar** icons
   Toolbar only: Select Visible, Hide, Show Hidden, CenterTo, FlyOut, Quick Info, 2D/3D toggle.
   Other toolbar actions are also available on the right-click menu.
f. **Right-click menu**
   Expand, Layout, Select, Actions, Find Path
g. **Kineviz Logo Menu**
   Logout, Home, Shortcut, About
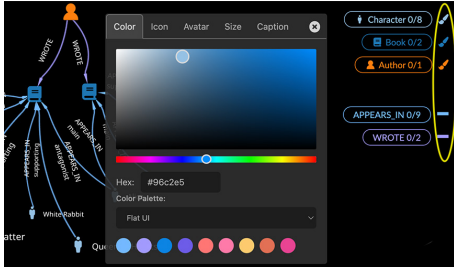

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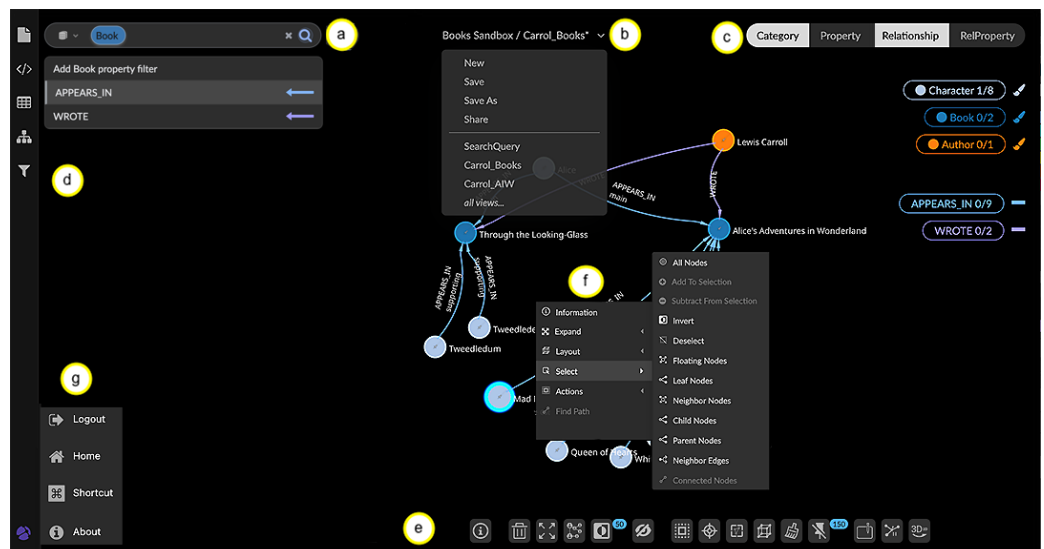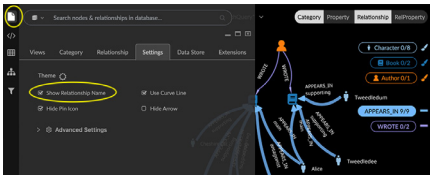
Style Nodes and Edges

- **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
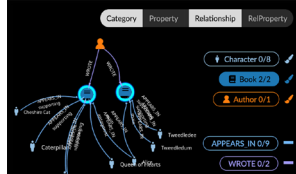   - **Node** or **Edge size scale**
    - **Caption position**

Navigate and Select

- **Mouse + keyboard options**

  Pan, **Zoom**, **Rotate**, **Select**, **Undo/Redo**, etc.

  - Click the Kineviz logo and select **Shortcut** 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
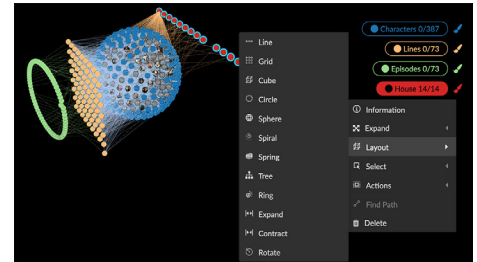
- **Toolbar-only actions**

  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.

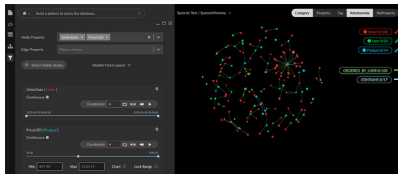 - Hierarchical **Ring** or **Tree** layout, centered on the nodes you selected.

  - **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)
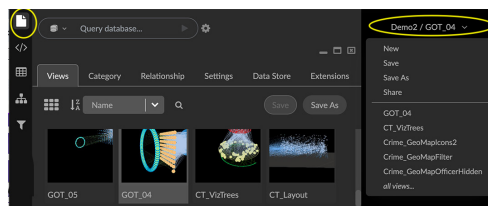2. Right-click**>Find Path**

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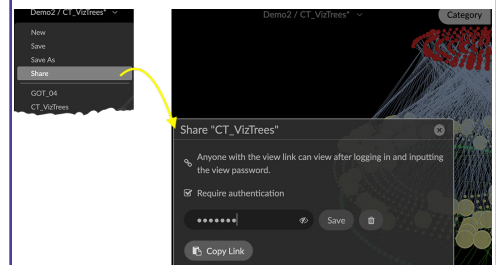
- **Share a saved view**

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
Delete selection	delete
Clear graph	ctrl+shift+**C**
Undo	ctrl+**Z**
Redo	ctrl+**Y**
History	ctrl + shift + **H**
Save	ctrl + **S**
Pan	left mouse click-drag OR **1**+Left mouse click-drag
Zoom	mouse wheel OR **2**+left mouse click-drag
Fast zoom	ctrl+mouse wheel
Fly Out (Reset view)	alt+shift+**R**
Center on a selected node	**c**+left mouse double click
Rotate (Manual)	right mouse click-drag OR **3**+left mouse click-drag
Toggle Rotate (Automatic)	ctrl+**O**
Toggle Orbit (Automatic) around x- axis	ctrl+alt+shift+**o**
Toggle Orbit (Automatic) around y- axis	ctrl+**o**
Toggle Orbit (Automatic) around z- axis	ctrl+shift+**o**
Stepwise Move	Arrow key click (right, left, up, or down)
Move a selection	left 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**

Action	Shortcut
Select all nodes	ctrl+**A**
Deselect all nodes	alt+**A** OR double click empty space
Select a node or edge	left mouse click
Select multiple nodes and edges	shift+left mouse click-drag
Add a node to a selection	ctrl+left mouse click
Add multiple nodes to a selection	ctrl+left mouse click-drag
Subtract a node from a selection	alt+left mouse click
Subtract multiple nodes from a selection	alt+left mouse click-drag
Select all orphaned (floating) nodes	shift+**D**
Invert selection	**I**
Invert selection for selected node categories	shift + **I**
Toggle Leaf Trimming	ctrl+**L**
Full Screen	ctrl+**F**
Hide menu	esc