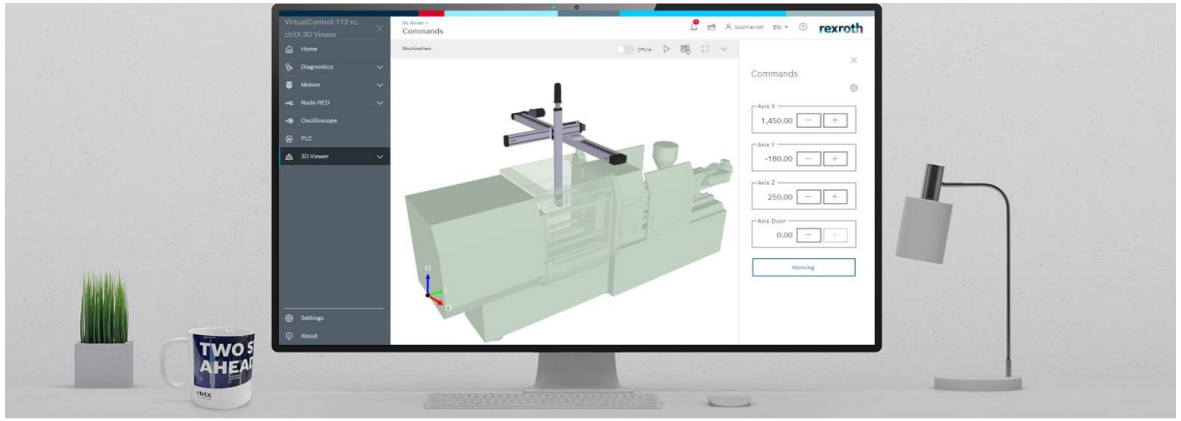
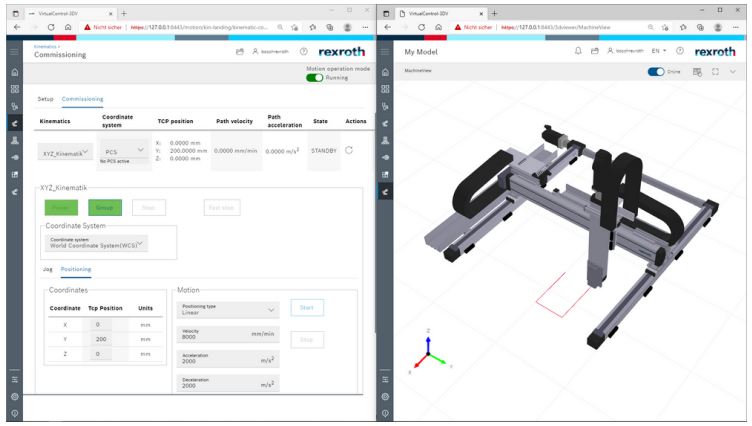
Challenge 04: 3D Viewer App

Task 02

Challenge 04: ctrlX Motion & 3D Viewer | Task 02





Description

From Task 01, you have successfully configured and commissioned the Cartesian Multi-Axis System (CMS). Your next objective is to enhance the user experience (UX) by integrating a 3D design model of the CMS. This addition will enable users to visualize and simulate the motion of a mechanical system or a set of interconnected components, offering a visual preview of the CMS's actions before executing the real commands on the actual system. When the system is on, you should be able to simulate the Axes movements of the 3D model.

Task

This task will test your ability and understanding on configuring a 3D model with Motion Axes and Kinematics for visualization and testing purpose.

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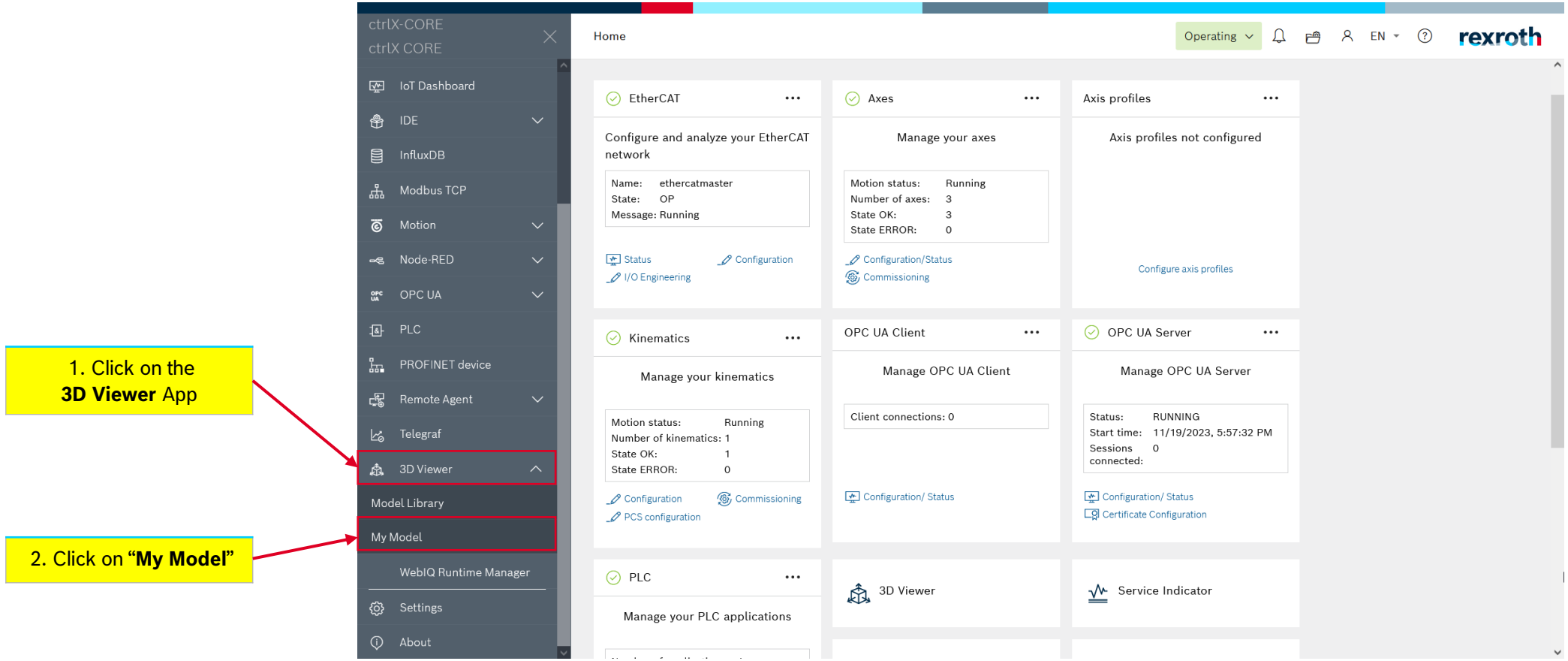
Steps

1. Navigate to the **3D Viewer App** from the Home page of the ctrlX CORE Web Based User Interface.

ctrlX Web-Based User Interface – Home Page



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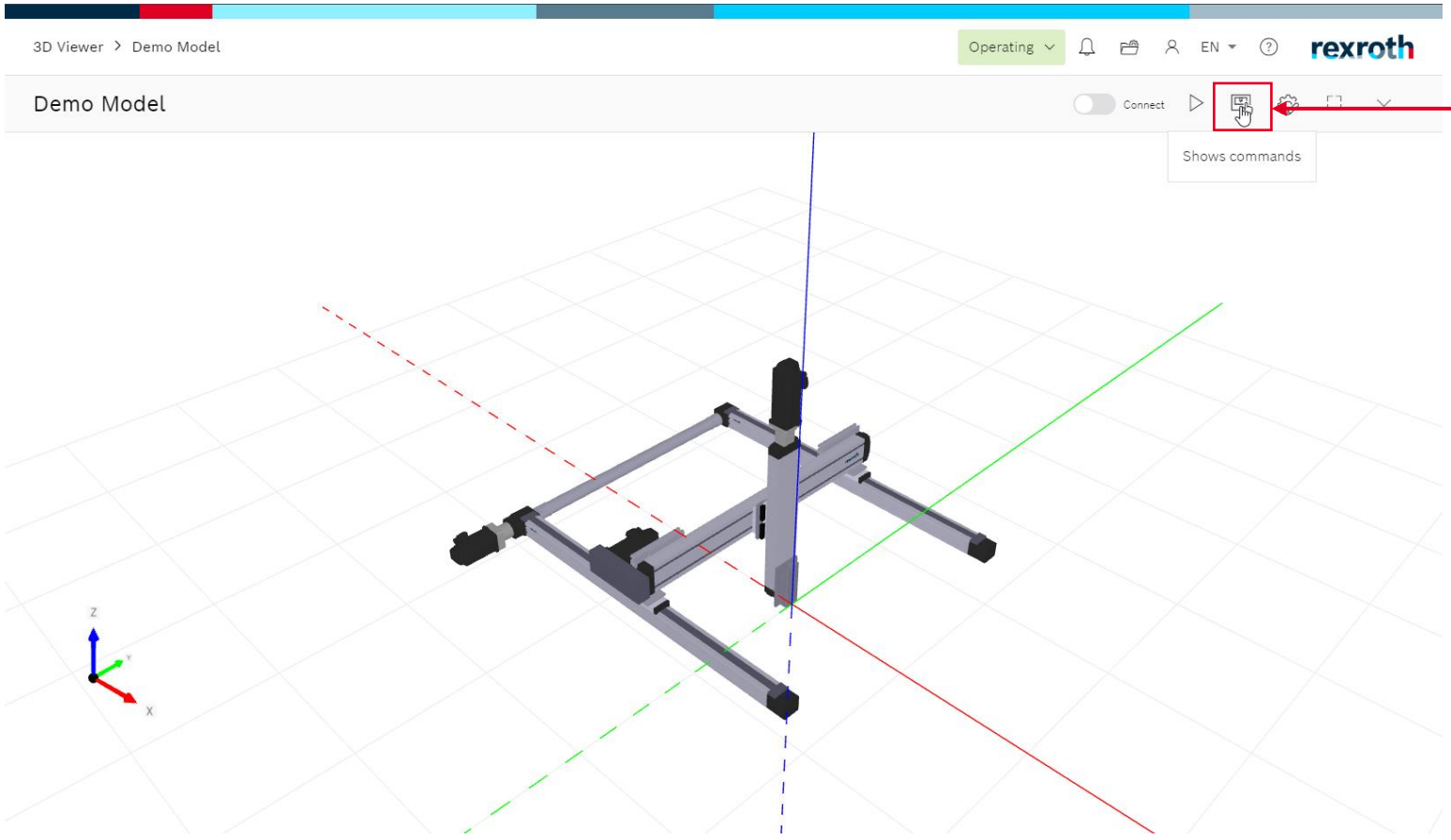
Steps

2. In the **“My Model”** window, there is a Demo Model of a Cartesian Multi-Axes System (CMS) pre-installed with the **3D Viewer App**.

ctrlX 3D Viewer – Demo Model



3. Select the **“Shows Commands”** button

4. The **“Commands”** dialog

- The **“Commands”** dialog shows the axis positions
- Function:
  - **Jogging**: The buttons "+" and "-" can be used to move the model axes within the limit values
  - **Homing**: The model is reset to the initial positions
- The axis is moved by one increment consisting of a defined step width and the selected direction (+/-)

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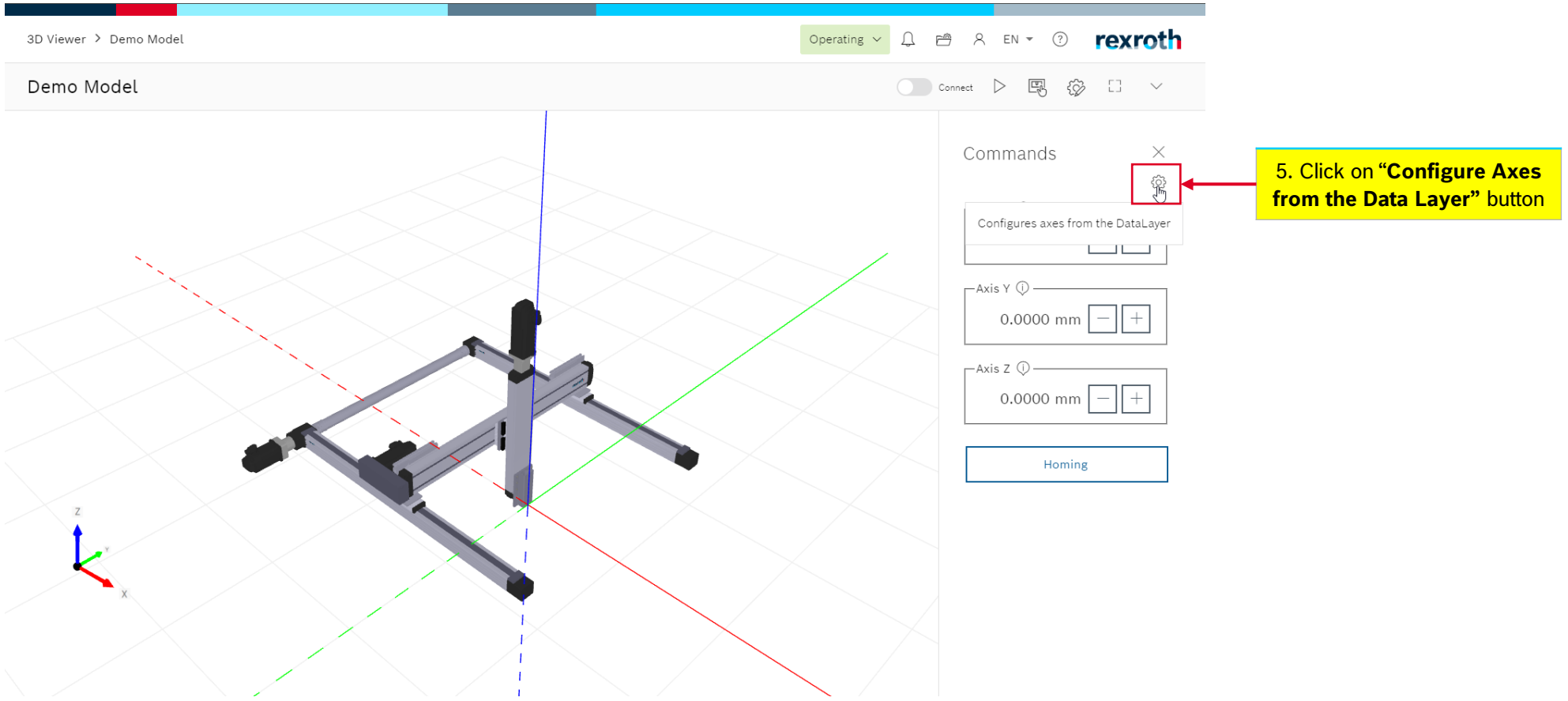
Steps

3. Configure the **Demo Model** in the **“My Model”** window

ctrlX 3D Viewer – Configure Axes



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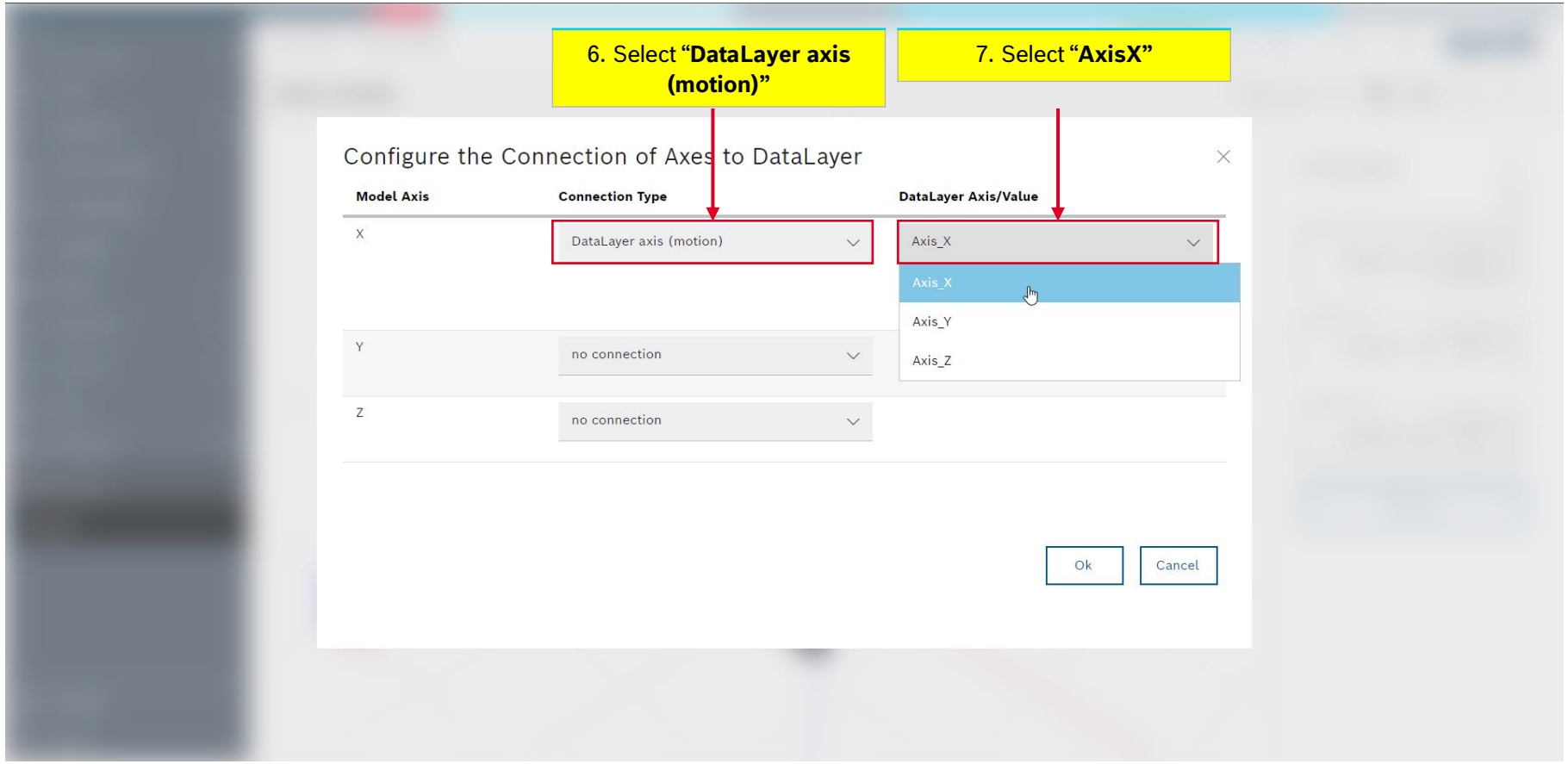
Steps

3. Configure the **Demo Model** in the “**My Model**” window.

ctrlX 3D Viewer – Configure Axes

- In the “**Configure the Connection of Axes to DataLayer**” dialog box, the Model Axis and the axis configuration of the ctrlX Motion (in Task 01) need to be configured
- For the “Connection Type”, select:
  - **DataLayer axis (motion)**
- For the “DataLayer Axis/Value”, select:
  - **AxisX**
- After the correct axis has been selected, confirm with "**OK**".



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Steps

4. Now it's your turn! Complete the tasks below.

Do It Yourself

"**Configure the Connection of Axes to DataLayer**":

1. Model Axis: **Y**
   - "Connection Type": **DataLayer axis (motion)**
   - "DataLayer Axis/Value": **AxisY**

2. Model Axis: **Z**
   - "Connection Type": **DataLayer axis (motion)**
   - "DataLayer Axis/Value": **AxisZ**

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Steps

5. After the Axes have been configured, the Demo Model is ready to be connected to the ctrlX Motion Axes.

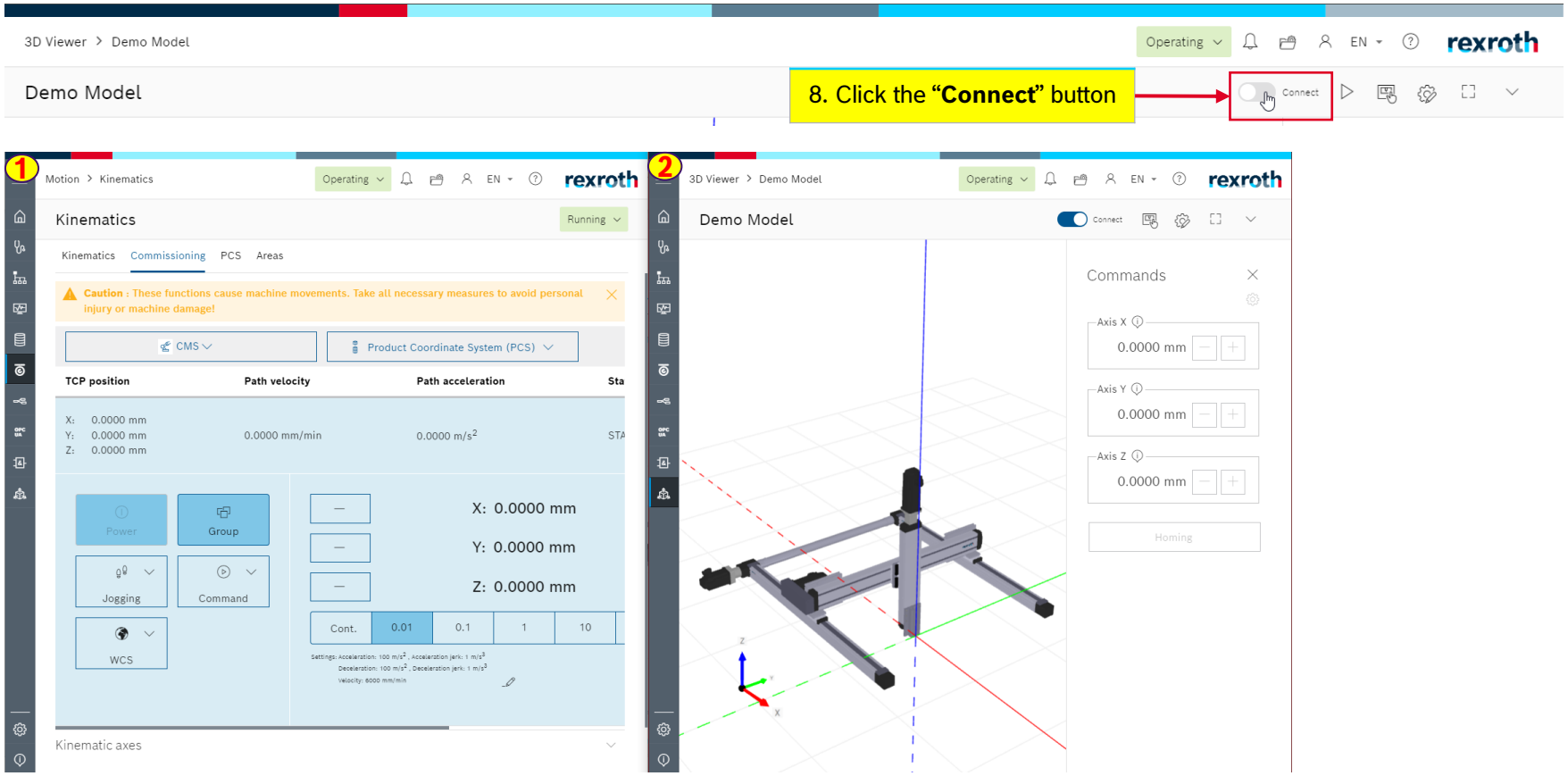
ctrlX 3D Viewer – “Connected” Mode

- Click the “**Connected**” button in the command bar (top-right)

- The “**Connected**” mode allows the Model Axes to be controlled by the ctrlX Motion Axes (configured in Task 01)

- In the web browser, open two (2) tabs:

1. **ctrlX Motion Kinematics Commissioning window**
   - “**Power**” enabled
   - “**Group**” enabled
2. **ctrlX 3D Viewer Demo Model window**
   - “**Connected**” mode enabled



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Steps

6. Now it’s your turn! Complete the tasks below.

Try It Yourself

- Move the “**CMS Demo Model**”:
  - X-Axis: **550 mm**
  - Y-Axis: **450 mm**
  - Z-Axis: **375 mm**

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Steps

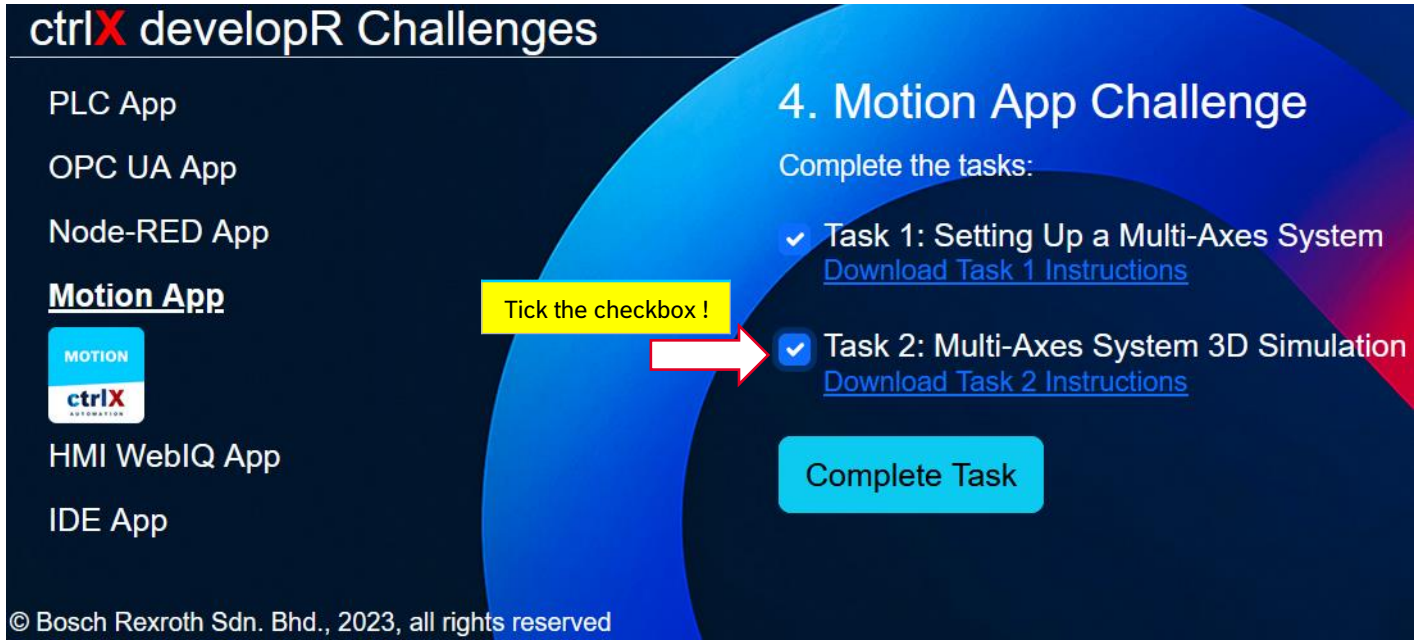
Once you have completed Task 2, follow the steps below.

How to complete Task 2 Motion App

- You can test your solution against the Task description
- Once it satisfies the requirements, confirm that you have completed the task by informing the available instructor for verification
- In the ctrlX developR challenge website, under the Motion App challenge section, tick [✓] the Task 2 checkbox

Congratulations, you've completed the tasks!

Follow the next step to complete the challenge!



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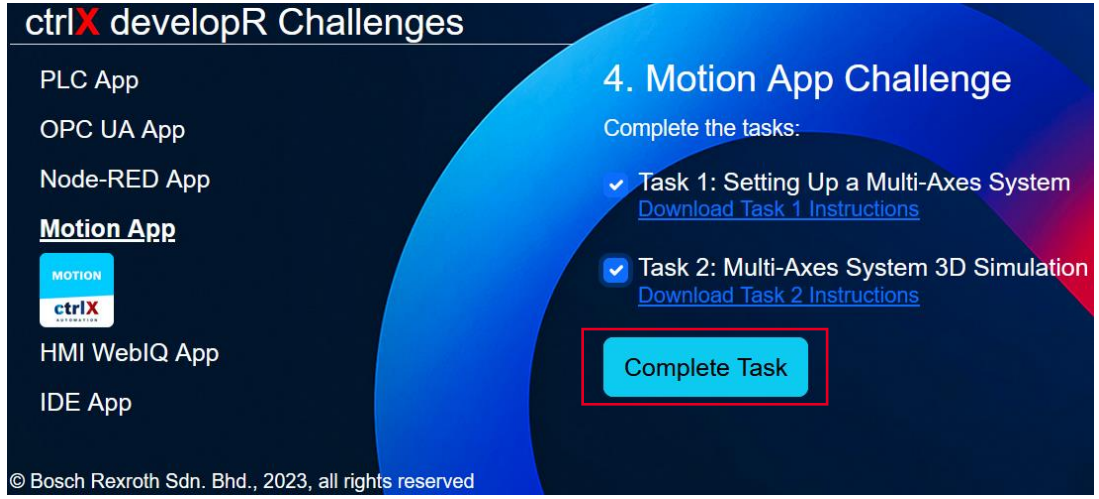
Steps

Once you have completed Task 1 and Task 2, follow the steps below.

How to complete the Motion App Challenge

- Finally, click on the "**Complete Task**" button



- Once pressed, the button text will change to "Task Completed" and you will be notified with a message that the challenge has been successfully submitted.
- By pressing the "Complete Task" button, the duration it takes for the team to complete the challenge will be automatically submitted.
- Submission only can be done once per challenge.

Congratulations, you've successfully completed the Motion App challenge! Wonderful!

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Congratulations!

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