How to install a GSD file in TIA Portal

This guide shows you how to install a GSD file in TIA Portal and add the device it describes to your hardware configuration. The example uses the GSD file for the fieldbus CPU system module of the B&R X20 System. You download the file, install it through the GSD management window, find the device in the hardware catalog, and add it to your network.

Prerequisites

Before you start, make sure you have:

- Siemens TIA Portal installed on your computer.
- A project that is open or ready to create, with a PLC in it (this example uses PLC_1 CPU 317-2 PN/DP).
- Internet access to download the GSD file for your device.

Steps

1. Download the GSD file

1. Open your web browser.
2. Search for and download the GSD file for your device. In this example, it is the GSD file for the fieldbus CPU system module of the B&R X20 System.
3. Save the file to a location you can find again, for example C:\Users\[YourName]\Downloads\GSD.

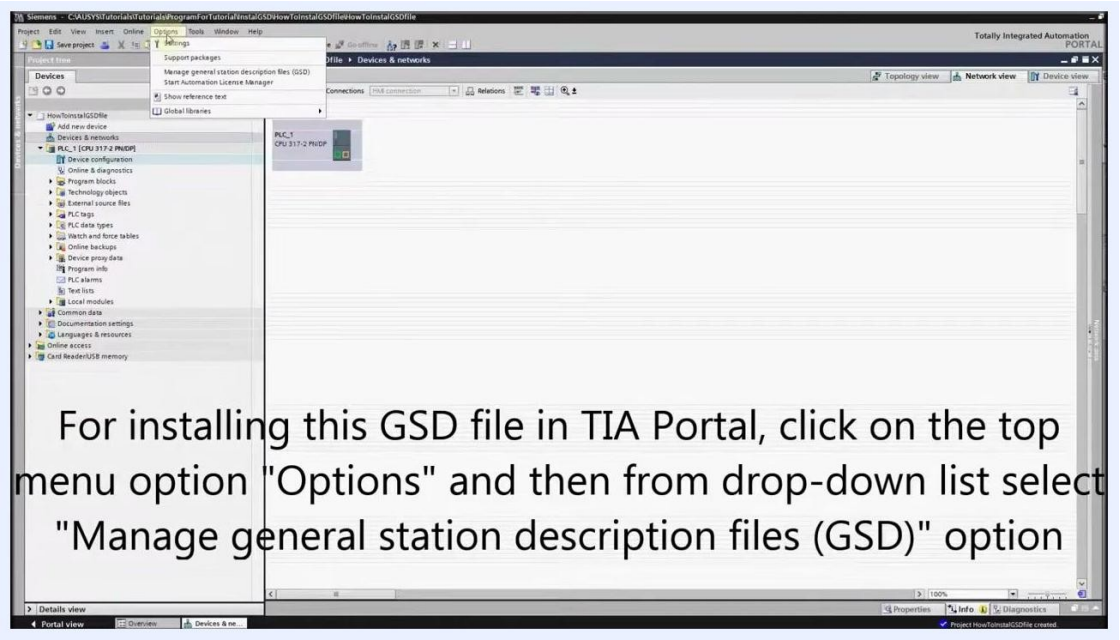
2. Open your project in Siemens TIA Portal

Launch Siemens TIA Portal on your computer. Open your existing project or create a new one.

3. Go to the Devices & networks workspace

1. In the **Devices** panel on the left, expand the project tree to view the device configuration.
2. Make sure you are in the **Devices & networks** workspace with the **Network view** tab selected.

3. Confirm that your PLC, for example PLC_1 CPU 317-2 PN/DP, is visible in the workspace.



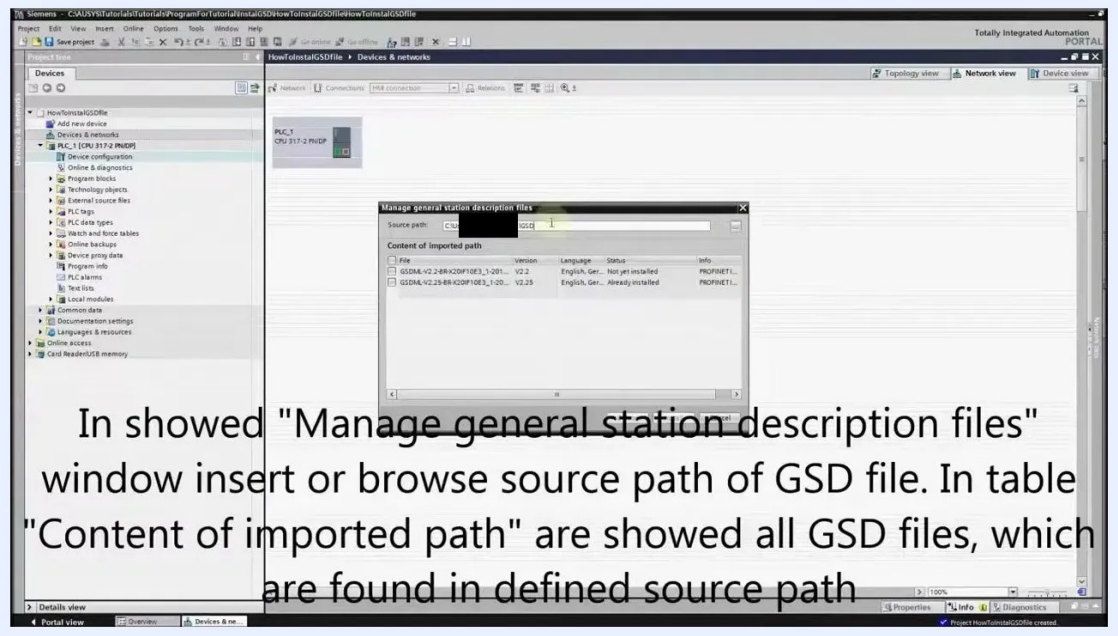
TIA Portal Devices & networks workspace with the project tree and PLC_1 CPU 317-2 PN/DP visible

4. Open the GSD management window

To install the GSD file in TIA Portal, start from the top menu bar.

1. Click **Options**.
2. From the drop-down menu, select **Manage general station description files (GSD)**.

The GSD management window opens.

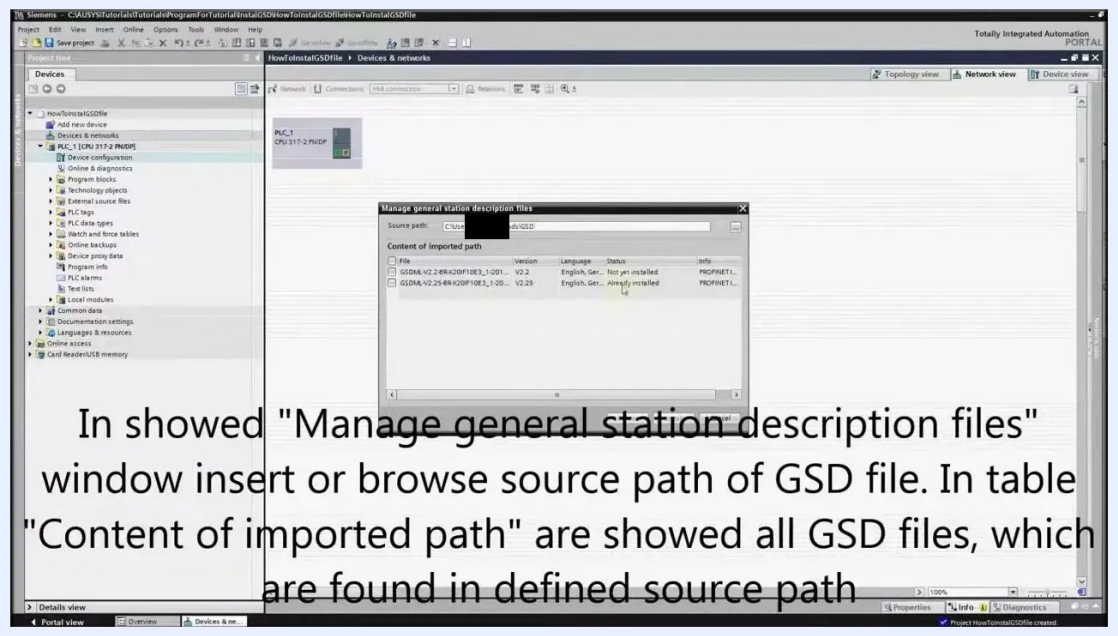


The Options menu open with Manage general station description files (GSD) highlighted

5. Browse to the GSD file

1. In the **Manage general station description files** window, find the **Source path** field.
2. Enter or browse to the folder where you saved the GSD file, for example C:\Users\[YourName]\Downloads\GSD.

The **Content of imported path** table lists all GSD files in that folder. For each file, it shows the version, language, and installation status.

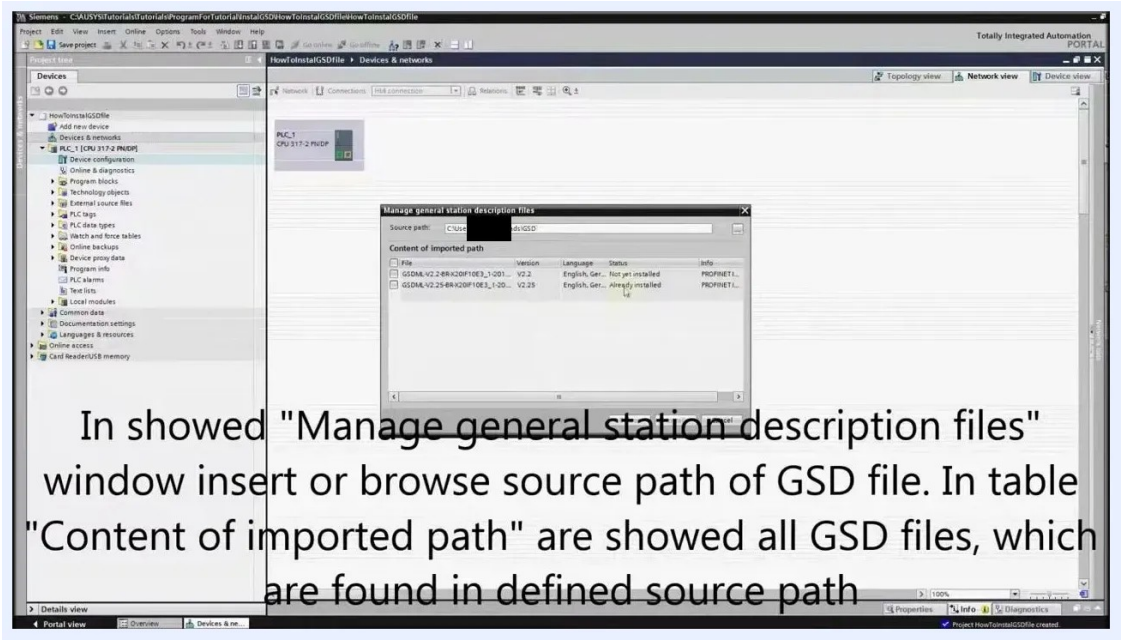


The Manage general station description files window showing the source path and a list of GSD files with statuses such as Not yet installed and Already installed

6. Install the GSD file

1. In the list, select the check box next to the GSD file you want to install. Its status should read "Not yet installed".
2. Click **Install** at the bottom of the window.

TIA Portal shows the installation progress, for example "80% Installation of GSD files...". Wait for the installation to finish.

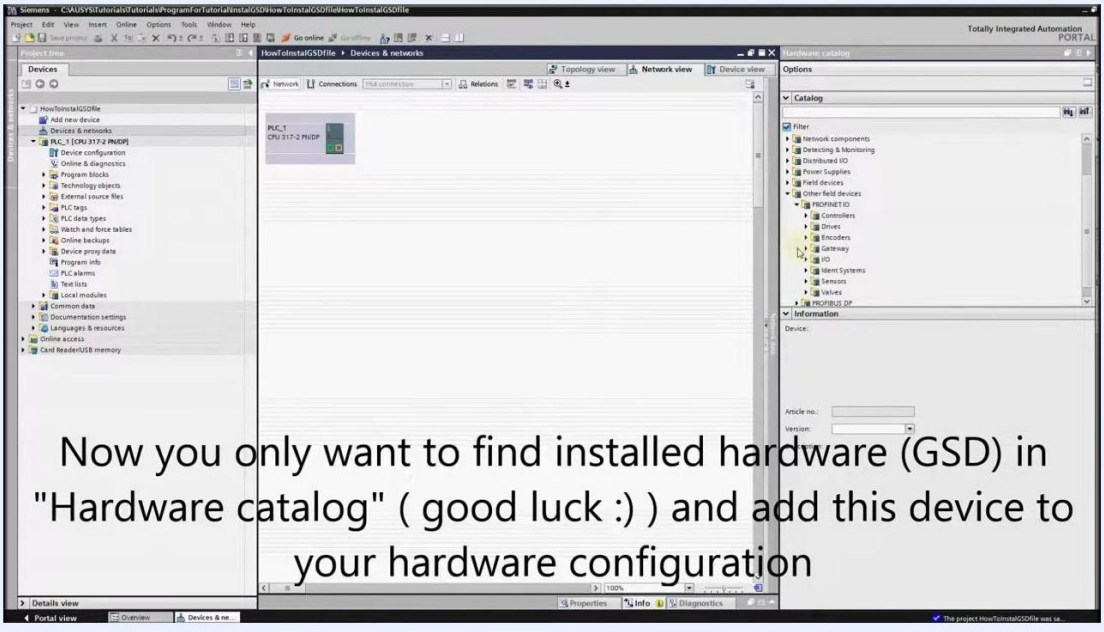


The installation progress dialog showing 80% Installation of GSD files and the remaining time, with the GSD management window in the background

7. Wait for the hardware catalog update

After the installation, an **Updating hardware catalog** dialog appears in the **Manage general station description files** window. It displays the message "The update may take some time."

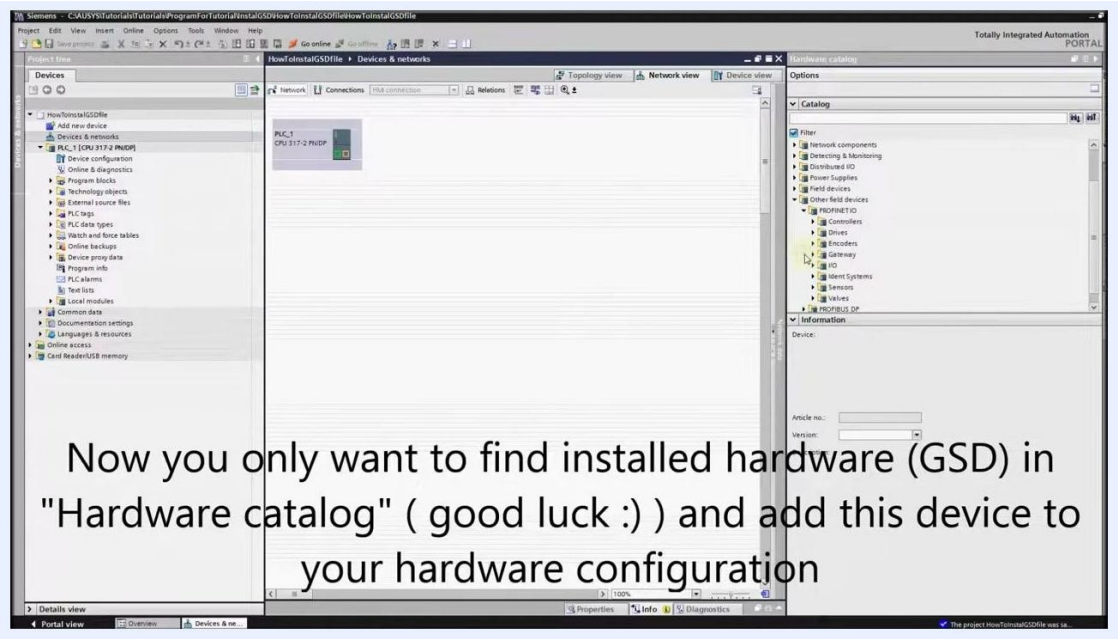
Do not close the window or interrupt the process until the update finishes.



The Updating hardware catalog dialog shown over the Manage general station description files window while the update is in progress

8. Return to the workspace and open the hardware catalog

When the update completes, the dialog closes automatically. The **Devices & networks** workspace is visible again. The project tree with your PLC is on the left, and the **Hardware catalog** with its list of device categories is on the right.



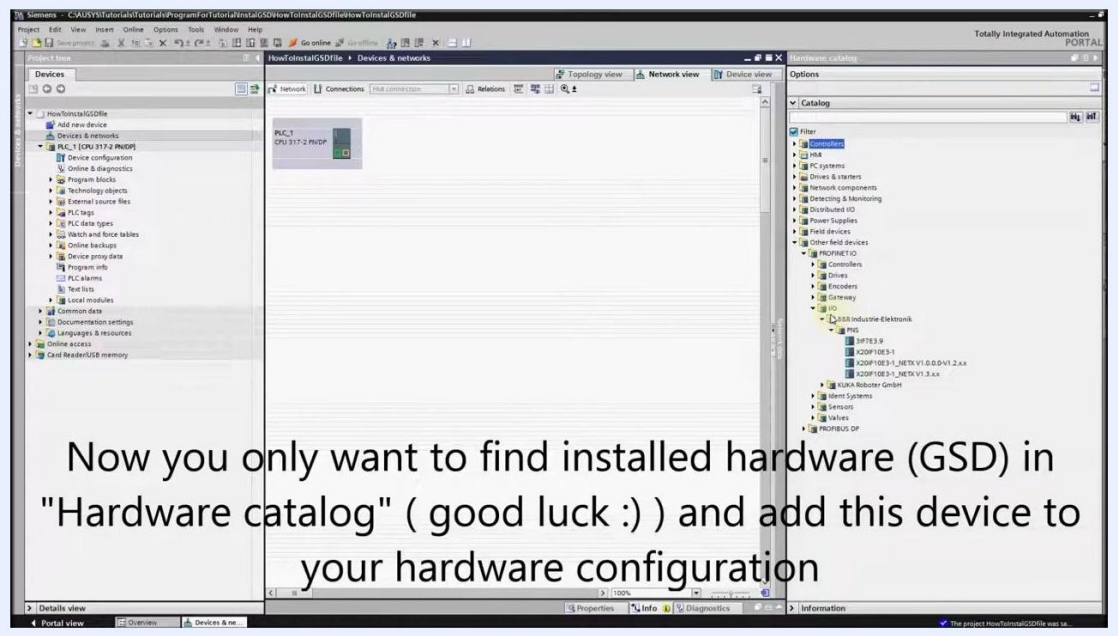
The Devices & networks workspace with the Hardware catalog visible on the right, ready for you to find the installed GSD device

9. Find the installed GSD device in the hardware catalog

In the **Hardware catalog** panel, expand the folders in this order:

Other field devices > **PROFINET IO** > **IO** > **B&R Industrie-Elektronik** > **PNS**

The installed GSD devices appear under **PNS**. In this example, they are X20IF10E3-1, X20IF10E3-1_NETX V1.0.0.0/V1.2.xx, and X20IF10E3-1_NETX V1.3.xx.

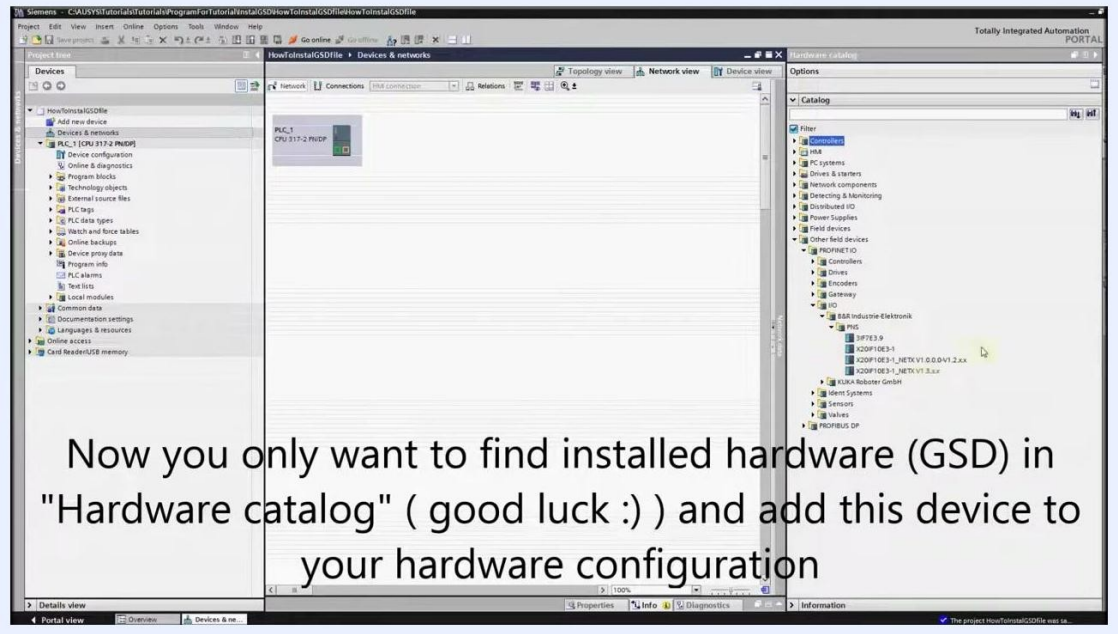


The Hardware catalog expanded to B&R Industrie-Elektronik > PNS, with the installed GSD devices listed

10. Add the device to the hardware configuration

1. In the hardware catalog, click the device you want, for example X20IF10E3-1.
2. Drag and drop it into the **Devices & networks** workspace, or use the context menu to add it.

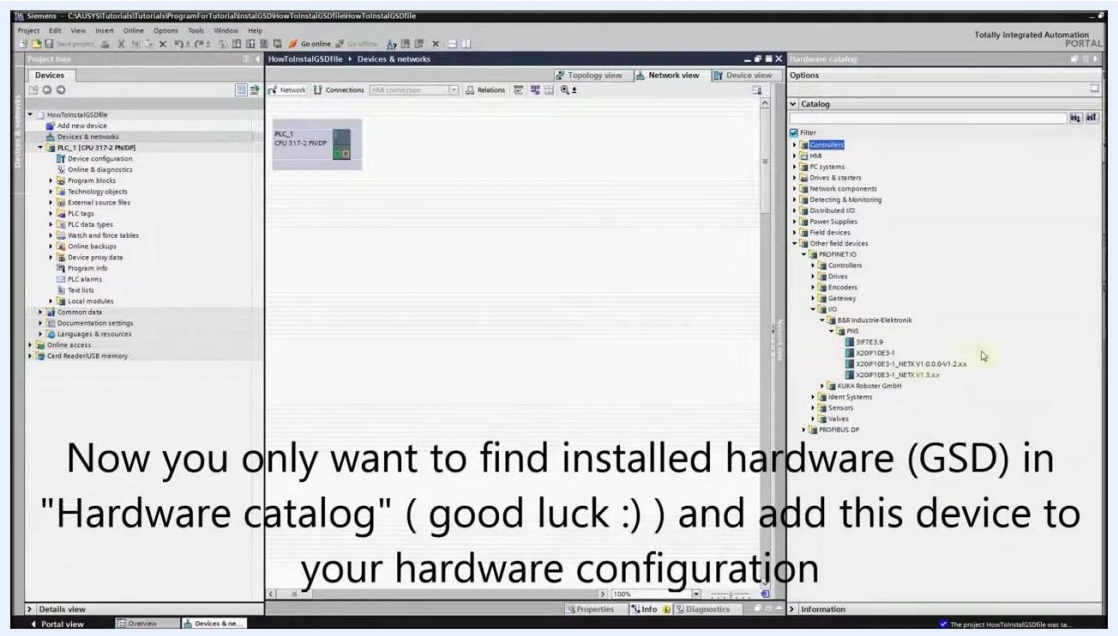
The device appears in the network view.



The Hardware catalog with B&R Industrie-Elektronik > PNS expanded and the GSD device highlighted, ready to add to the configuration

11. Verify the device and network connection

In the **Devices & networks** workspace, confirm that the new device, for example X20IF10E3-1, is present and connected to your PLC. A green connection line (PLC_1_PROFINET IO-System) links the PLC and the new device. This shows the device was added successfully.



The Devices & networks workspace showing PLC_1 and the new X20IF10E3-1 device linked by a green line, confirming it was added to the hardware configuration

Summary

You now know how to install a GSD file in TIA Portal. You downloaded the file, installed it from the **Options** menu, waited for the hardware catalog to update, and added the device from the catalog to your project. You can now continue with further device setup and network configuration as your project requires.