



## Installing Qiskit Metal Using Git+URL by Onri Jay Benally

- Check online or on ChatGPT for recommended Python versions compatible with desired package.
- Download & install Miniconda or JupyterLab. Jupyter Notebook can be installed optionally. (<https://docs.anaconda.com/miniconda> or <https://jupyter.org/install>).
- The following scripts for conda & pip commands should be performed in Anaconda Prompt [Admin]. Anaconda Prompt comes with the Miniconda installation. Check your app location.

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- Install pip. Confirm versions: `conda install pip conda >> pip --version >> conda --version`
  - Create new environment: `conda create --name <custom Qiskit Metal environment name> python=3.9` (or other recommended Python version)
  - Access the new Qiskit Metal environment, proceed with installing desired packages & their dependencies: `conda activate <custom Qiskit Metal environment name>`
  - Install ipykernel. Create custom kernel using ipykernel: `conda install -c conda-forge ipykernel >> python -m ipykernel install --user --name=<name of custom kernel>`
  - Install Git: `conda install git -y` or download from <https://git-scm.com/download/win>
  - Install Visual Studio Installer from online >> install Visual Studio Community (Check the boxes on the right-side panel or under the Individual Components tab & be sure to select Windows 10 or 11 SDK). Select the C++ options on the Universal Windows Platform development box or Windows application development box (either one of the two), including the Desktop Development with C++.
  - [pip install gdspy won't be able to build wheels without an updated Visual Studio or Visual Studio Build Tools].
  - Upgrade pip: `python -m pip install --upgrade pip setuptools wheel`
  - Run a script to install directly from the GitHub URL: `pip install git+https://github.com/qiskit-community/qiskit-metal` (not the git URL)
  - Run the next script to install a DXF interface: `pip install git+https://github.com/mozman/ezdxf`
  - Add these 3 associated paths [if using Anaconda] to System Variables: Anaconda3, Anaconda3\Scripts, & Anaconda3\Library\bin. If using Miniconda, add: miniconda3, miniconda3\Scripts, & miniconda3\Library\bin. Follow instructions from this video (<https://youtu.be/Xa6m1hJHba0>) for more details.
  - Done! Qiskit Metal should be ready to use.

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### Options:

- To export the GDS file from the Qiskit Metal render, go to the GDS button on the UI & select the download location using the browse button. Press Enter, then check download location in the File Explorer. Proceed with converting the downloaded file into a GDS by renaming the file with a .gds at the end of the name to turn it into GDS filetype.
- To add darkmode manually to Qiskit Metal, type (`pip install qdarkstyle`) into Anaconda Prompt [Admin].
- To update Qiskit Metal, type (`pip install --upgrade qiskit_metal`) into Anaconda Prompt [Admin].
- If the install is bringing up an error, be sure to restart entire system.