

Installation method of VTK distribution box



Overview

Tutorial | VTK-m This page contains materials for the VTK-m tutorial, which will be presented on Sunday, October 20th at the VIS19 conference in VTK documen.

Key Takeaways

VTK can be installed by downloading the source, configuring with CMake, building in a separate directory, and linking the libraries to your development environment. Step 1: Obtain VTK Source

Download the latest VTK source code from the official GitLab repository using:

```
git clone https://gitlab.kitware.com/vtk/vtk.git
```

Alternatively, you can download a release archive (zip or tar.gz) from the VTK releases page .

Step 2: Prepare Dependencies

Ensure the following tools and libraries are installed:

- CMake (version 3.12 or newer) for configuration .
- C++ compiler (g++ on Linux, Visual Studio on Windows) .



- Optional libraries depending on features: Python (≥ 3.4), Qt, HDF5, MPI, ffmpeg .
- Step 3: Create a Build Directory

VTK requires an out-of-source build. Create a separate directory for building:

```
mkdir /opt/VTK-buildcd /opt/VTK-build
```

This keeps the source directory clean and avoids in-source build issues .

Step 4: Configure with CMake

Run CMake to configure the build:

```
cmake /opt/VTK
```

- Use cmake-gui for a graphical interface or ccmake for terminal-based configuration.
- Set the source directory to the VTK source and the build directory to your build folder.
- Select the generator appropriate for your platform (Makefiles, Ninja, or Visual Studio) .

Step 5: Build VTK

Compile the source using your chosen build system:

- On Linux/macOS:

```
make -j$(nproc)
```

- On Windows, build using Visual Studio or msbuild .

Step 6: Install VTK

After building, install the libraries and headers:

```
sudo make install
```

This typically installs files to /usr/local/include/vtk- and /usr/local/lib/vtk- on Linux .

Step 7: Link VTK in Your Projects

- Set environment variables or use CMake to locate VTK:

```
export VTK_DIR=/usr/local/lib/cmake/vtk-
```

- In Visual Studio, you can use the .vsprops file or Property Manager to include VTK binaries and headers .

- Ensure DLLs or shared libraries are in your system PATH for runtime linking.

Optional: Integration with Qt or Python

- For Qt applications, enable VTK_Group_Qt in CMake.

- For Python scripting, ensure Python development headers are available and the correct Python version is selected in CMake . Following these steps will provide a fully functional VTK installation ready for development and deployment.

Article Content

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