Cyber Space Odyssey - HOWTO INSTALL

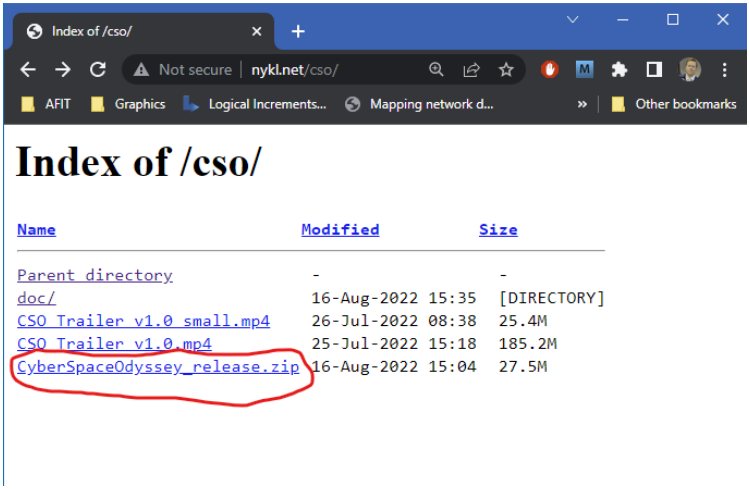
- Install MSVC 2022 w/ C++ Support so you can write code to send UDP packets
- Install Wireshark so you can capture the server/client traffic on the loopback interface
- Download and extract CyberSpaceOdyssey's .zip archive.
  - Launch CyberSpaceOdyssey's Server via `Launch Server.bat`
  - Launch CyberSpaceOdyssey's Client via `Launch Client.bat`
  - Play CyberSpaceOdyssey using the Client graphical window!

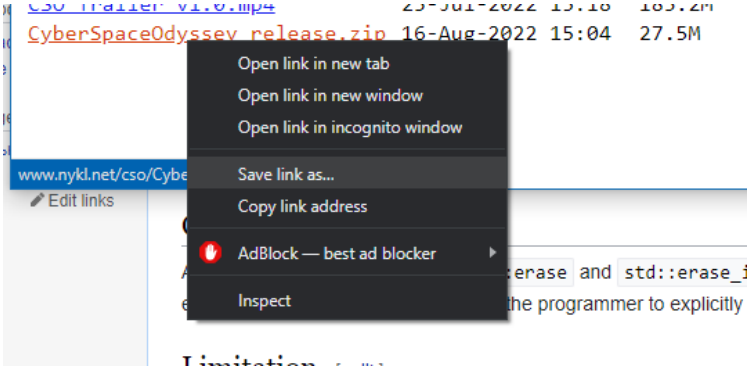
Download CyberSpaceOdyssey

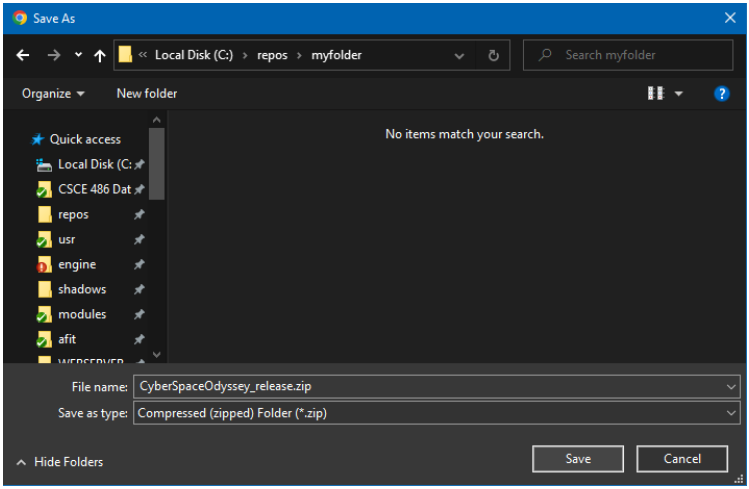
CyberSpaceOdyssey does not need to be installed, only downloaded and extracted.

1. In your web browser, navigate to http://www.nykl.net/cso/ and download CyberSpaceOdyssey_release.zip. You may save the archive anywhere on your filesystem. In this example, we save

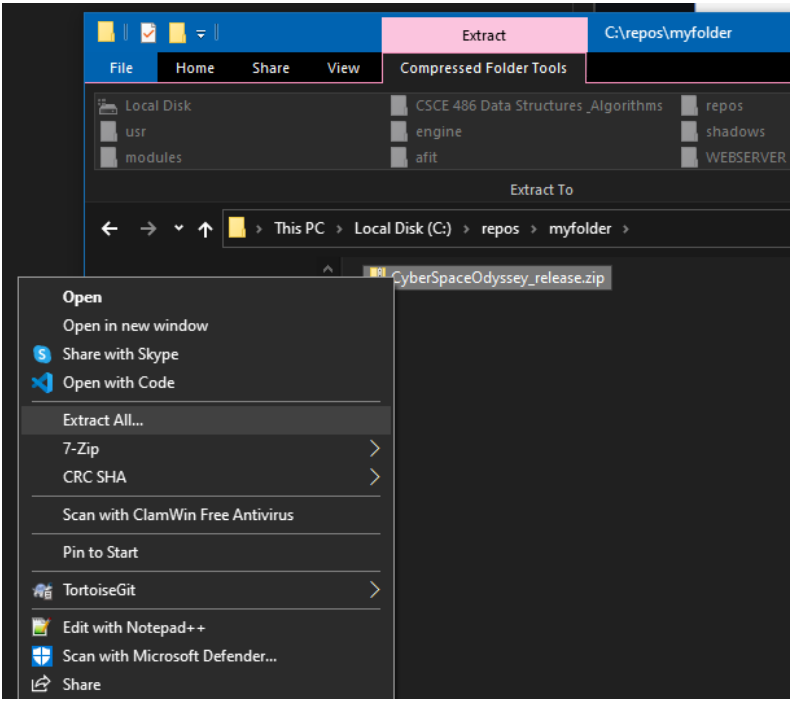
`CyberSpaceOdyssey_release.zip` to `C:\repos\myfolder`.

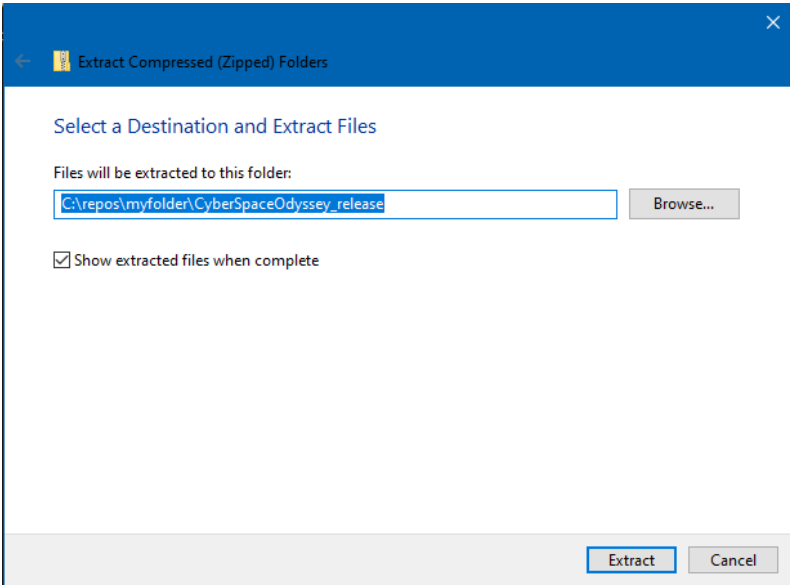




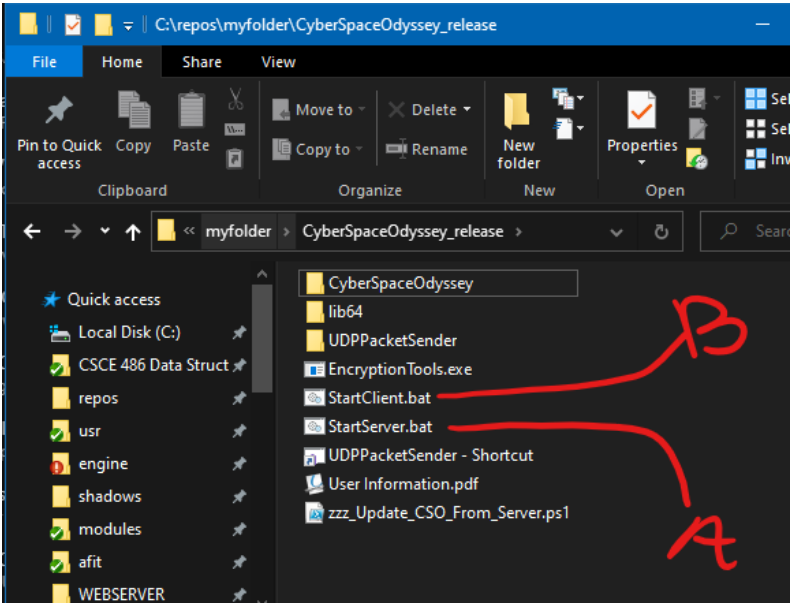


2. Next we will extract the .zip archive. Navigate to the folder where the archive was downloaded. To extract the archive, right click and selected `Extract All`. Then press `Extract`.


Extract
C:\repos\myfolder
File
Home
Share
View
Compressed Folder Tools
Local Disk
usr
modules
CSCE 486 Data Structures _Algorithms
engine
afit
repos
shadows
WEBSERVER
Extract To
This PC
Local Disk (C:)
repos
myfolder
CyberSpaceOdyssey_release.zip
Open
Open in new window
Share with Skype
Open with Code
Extract All...
7-Zip
CRC SHA
Scan with ClamWin Free Antivirus
Pin to Start
TortoiseGit
Edit with Notepad++
Scan with Microsoft Defender...
Share



1. Now you can browse to the root of CyberSpaceOdyssey. The following files should be visible. The `StartServer.bat` (red letter `A`) launches the server. The `StartClient.bat` (red letter `B`) launches the client.



4. To play, one must first launch a server by double clicking `StartServer.bat`. After the server loads, you may move those windows to the side of your screen. You will not need to ever provide inputs to the server console or graphical window – it simply visualizes all the attached clients.

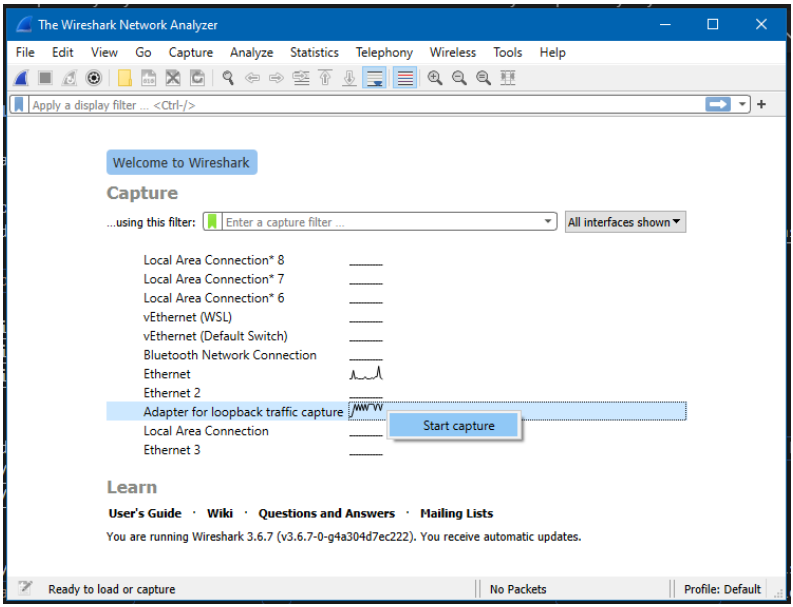
5. After the server is running, launch the client by double clicking `StartClient.bat`. The client is where you will spend your time playing Cyber Space Odyssey. All flying, hailing, issuing commands, etc will be done via the client's graphical window.

Download Wireshark

In order to capture and inspect the network traffic sent between the Server and Client, you must install Wireshark on your machine. Wireshark may be downloaded and installed, for free, from https://www.wireshark.org/download.html. On Windows, choose the

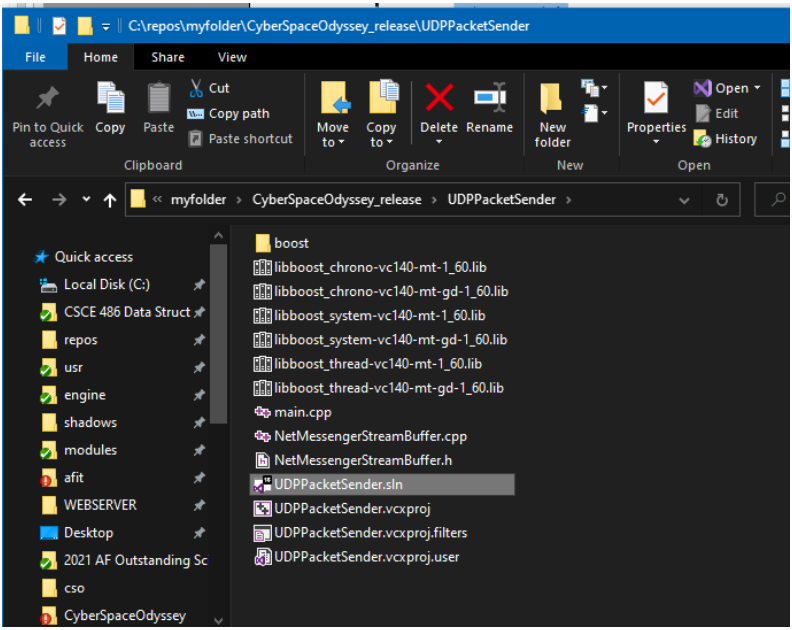
Windows Installer (64-bit). Run the installer and use all the default settings.

Once installed, you may capture packets using the *loopback interface* between the Server and Client, both of which are running on your local machine. The image below shows how to begin a capture -> Right click on `Adapter for loopback traffic capture` and choose `Start capture`.



Crafting and Sending your own UDP Packets

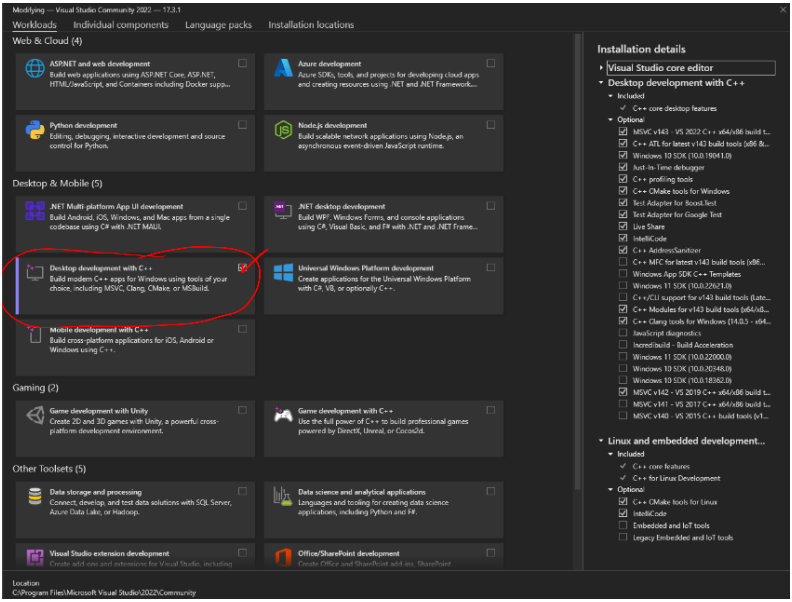
The within the root folder of your extracted `CyberSpaceOdyssey_release` folder, you will see a subfolder called `UDPPacketSender`, this contains a Microsoft Visual Studio 2022 solution file named `UDPPacketSender.sln` which will open a small source code project that will let you craft custom UDP Packets to send to the server in response to events that happen within the client's game.



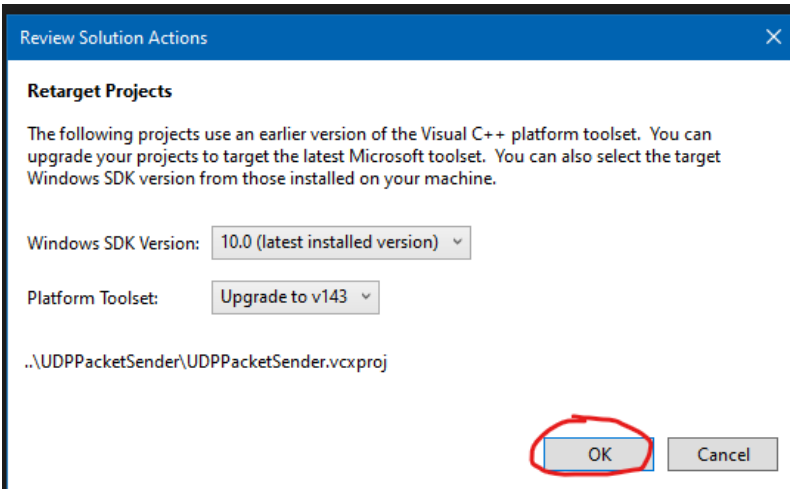
Install Microsoft Visual Studio 2022 (Community edition is *free*)

To open the UDP Packet Sender, one must use Microsoft Visual Studio 2022 from Microsoft at https://visualstudio.microsoft.com/vs/.

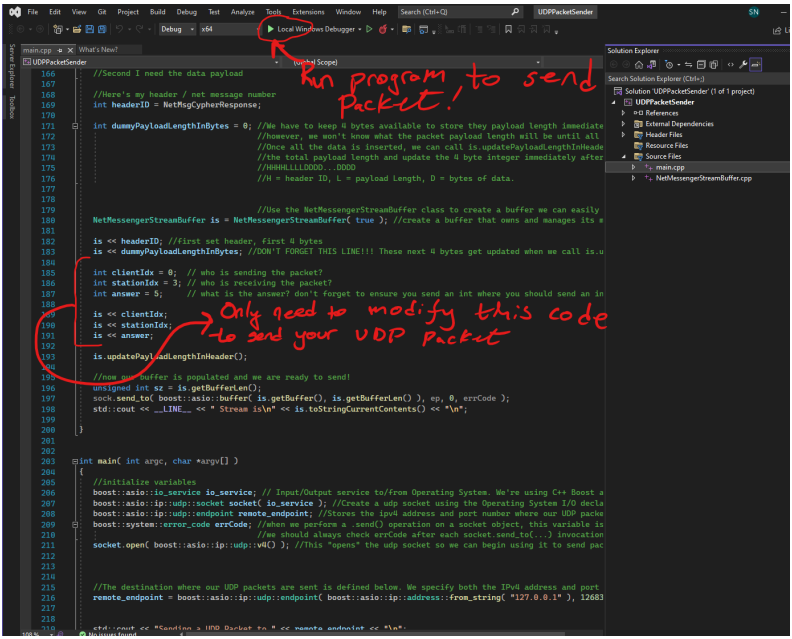
During installation, be sure to check the `Desktop development with C++` checkbox before continuing with the normal installation – this let's you compile and run the C++ source code.



Upon double clicking the `.sln` file, MSVC 2022 may ask if you would like to upgrade to the latest SDK. Choose “Yes”



To craft a packet, change the source code between lines 185 and 192 in main.cpp. After you set the variables to their desired values, press the *green play* button to compile and run the code – which will transmit your crafted UDP Packet.



Using NetMsgs and when to send them

How do I know what NetMsg to send when? Read pg.5 of `User Information.pdf` (Section *11 Summary of NetMsg Payloads*) to see what NetMsgs to send in response to a particular event. See pg. 6 of `User Information.pdf` (Section *12 NetMsg Packet Structure*) for a source code example.

`User Information.pdf` is located at the root of your `CyberSpaceOdyssey_release` folder. An online version is also available at http://www.nykl.net/cso/User%20Information.pdf.