

TUIO Server

TUIO (Tangible User Interface Object) is an open protocol for the communication of data from devices like a multi-touch display, an interactive surface, or a computer vision-based motion tracker. The sorts of information it describes includes touch events and object locations, much like with the Microsoft Surface, as per the video [here](#). TUIO uses a client/server model for communicating this data, so any program that is a TUIO client can receive touch or object data from any TUIO server.

TUIO is based on [Open Sound Control](#) (OSC) a specification for sending messages interactively, which while originally intended for sharing music and performance data, has been increasingly used for other kinds of non-musical data.

OSC transmits information across standard IP networks and the internet using [User Datagram Protocol](#) (UDP – see interfaces), so it's supported by a lot of systems, including Windows, Mac OS X, and Linux. Any system that supports OSC can also support TUIO, and consequently, there are many TUIO client and server programs across these platforms. Further, because TUIO uses UDP for communication, a TUIO server and client needn't be running on the same computer, or even on the same local network, though both running on the same computer probably covers most usage cases.

The UPDD TUIO server program implements a TUIO server such that any application that is a TUIO client and receives TUIO touch data can be controlled with a UPDD driver supported touch-screen, thus expanding the number of multi-touch enabled applications that UPDD can support, the schematic being:

Touch hardware > UPDD driver > UPDD TUIO Server > TUIO client application
> End user interaction

The main limitation is that UPDD TUIO Server only supports cursor data, and does not support object data, as the UPDD only tracks single-point touches on a multi-touch display. However, the main use of TUIO is to communicate multi-touch data, so most TUIO applications will be usable with the UPDD in spite of this limitation. If it should become necessary for the UPDD to support TUIO objects as well, an interface could be created to allow for the creation and positioning of virtual objects, much like the TUIO simulators that exist for testing and demonstration purposes.

Currently the UPDD TUIO Server exists as a stand-alone application that is supplied for each operating system. Development history is shown [here](#).

Touch-Base Support

<http://support.touch-base.com/Documentation/50218/TUIO-Server>