



Scalable and Easy-to-Use NIME Networking

Session

Demo Session 2

Abstract

The O2 protocol extends the real-time messaging features of Open Sound Control with new capabilities including named services, discovery, clock synchronization and timed messages, reliable message transmission, and publish/subscribe capabilities. Recent work has extended O2 with a light-weight protocol to extend O2 capabilities to devices that lack a full implementation of TCP/IP. The new protocol, O2lite enables connectivity with small microcontrollers over Wi-Fi, web browsers over WebSockets, and even with threads that communicate through shared memory. O2lite makes a direct connection to a single O2 host process and uses the host to provide service discovery and message routing. By off-loading functions to the host, O2lite is much simpler to implement and adaptable to many different transports and languages.

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Explanation

I will show and discuss how O2 and O2lite can be used to solve communication problems in interactive systems. The main demonstration will demonstrate connecting an ESP-32 microcomputer with accelerometers to a mapping program that controls sound generation. A browser-based graphical user interface is added to control the mapping. I will be happy to discuss high-level issues of system design or low-level implementation.

Project Website:

<https://www.cs.cmu.edu/~rbd/blog/nime-blog22may2022.html>

Demo Video:

<https://youtu.be/cPQQiYs2xeY>

Date & time

July 1, 2022 8:30 PM (GMT+1)