

# **A Simple ASCII-based Client/Server Protocol Bridge to the NSLS Control System**

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The National Synchrotron Light Source (NSLS) facility uses a robust protocol that has a binary format and requires a client to lookup and obtain device parameters, such as, device type, device node, local device number, and calibration parameters, and others from the Device Data Record (DDR) prior to making a request to a system device server. The client is also expected to handle ACK/NAQ handshaking, timeouts/retries, and message errors. An application that needs to read or set system device parameters is therefore tasked with the burden of providing the necessary protocol engine to satisfy these requirements. What can further complicate matters is the fact that users typically run applications on a variety of platforms, such as, VxWorks, Windows, Linux, and HP-Unix, thereby requiring the protocol to be ported to all these platforms. A convenient solution to this problem was to develop a protocol bridge that handled and hid the details of the control system protocol from the application and provided a simple ASCII-based interface that communicates through a TCP socket. The advantages afforded by this approach include a decoupled and layered interface that provides a transparent (platform independent) and simple interface to a variety of languages. The protocol bridge has proven successful in providing an easy to use application interface for MatLab, LabView, C++, and Visual Basic, as well as shell scripts.