

# Monitoring Network Protocols

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February 9, 2017

## Issue

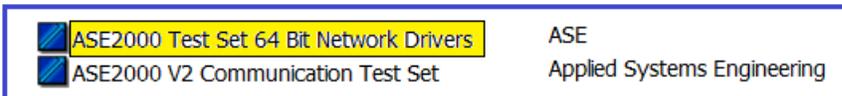
This paper describes procedures and concerns using the ASE2000 to monitor network protocols. Currently, these include DNP3 LAN/WAN, IEC 60870-5-104, and Modbus/TCP.

## Software Setup

### 64-Bit Operating Systems

If you are running in a 64-bit Windows operating system, you must have installed the **ASE2000 Test Set 64 Bit Network Drivers**. These are available on the ASE2000 release media (CD or memory stick) and from the download area of [www.ase-systems.com](http://www.ase-systems.com).

You can verify if the driver is installed from the Windows Control panel and the Programs and Features area.



The driver must be installed by the system administrator.

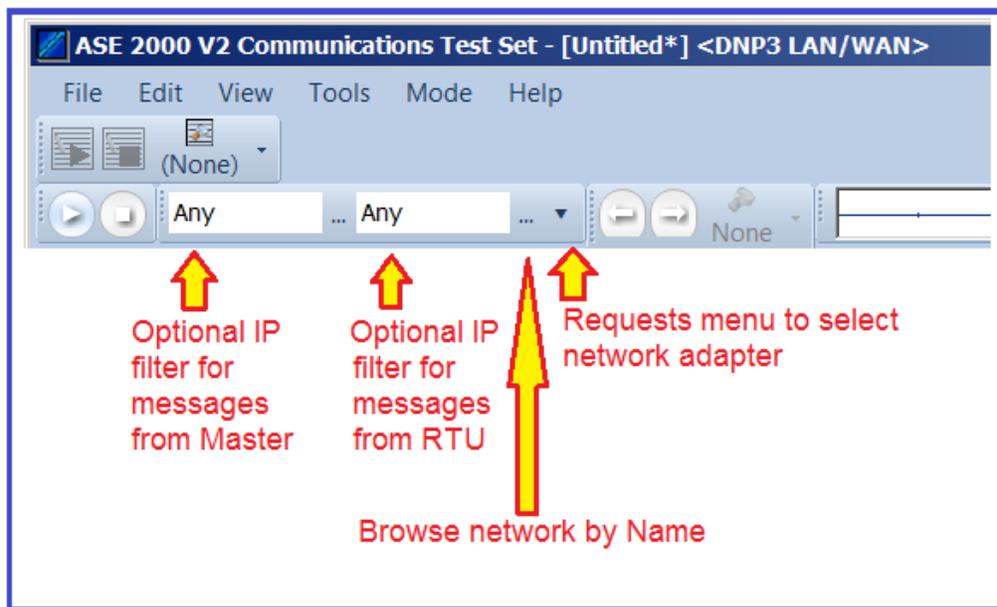
## ASE2000



You must run the ASE2000 as administrator in order to monitor network protocols. It may not be sufficient to just have administrator privileges. Explicitly select “Run as Administrator”

Select a network protocol such as DNP3 LAN/WAN, and, from the bottom left portion of the ASE200 windows, select monitor mode.

Network configuration properties are then shown in the upper portion of the window. Default settings should work in most cases. Once setting changes, if any, are made, start monitoring by selecting the *Start* ICON.



- IP Filters** By default, the ASE2000 shows all DNP3 messages. For networks with many DNP3 devices, the ASE2000 can be configured to show only messages for a particular master or a particular RTU. To do so, change contents of one or both of the filter fields shown above. The default “Any” setting shown instructs the ASE2000 to show messages to or from any IP location. Enter a specific node name or IP address in the left box to limit display of messages sent to or from a master at that location. Enter a specific node name or IP address in the right box to limit display of messages sent to or from a RTU associated with that IP node.
- Browse Adapters** Browses the network and presents a list of known network nodes. The ASE2000 can only monitor communication on one network adapter at a time. For systems with multiple adapters, the desired adapter can be selected from a menu reached by selecting the target shown.

## Hardware Setup

Monitoring requires that a network cable from the ASE2000 computer be inserted into a switch or similar network routing equipment also handling communication between the master and slave devices to monitor.

Most network devices are intelligent in that they present information only on the port to which a network packet is addressed. This operation will not present the desired DNP traffic packets on the ASE2000 monitoring port since they are not explicitly addressed to that port. To overcome this problem, the ASE2000 port must be configured, within the switch, as what is commonly called a “mirrored” port. The procedure for doing this is defined by the switch manufacturer.