# NaqsToUdp
## Version 1.00

# User Guide

**Nanometrics Inc.**
**Kanata, Ontario**
**Canada**

NaqsToUdp Version 1.00 User Guide



This product uses the Java™ 2 Runtime Environment (J2RE) Standard Edition, which includes code licensed from RSA Security, Inc. Some portions licensed from IBM are available at http://oss.software.ibm.com/icu4j/

Nanometrics, Inc.
250 Herzberg Road
Kanata, Ontario, Canada K2K 2A1
Tel (613)592-6776
Fax (613)592-5929
Email info@nanometrics.ca

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# Contents

# NaqsToUdp

NaqsToUdp is a communications program which enables data to be transferred reliably from one Nanometrics acquisition system to another, via TCP/IP. NaqsToUdp would normally run on the same machine as NaqsServer on the receiving system. It connects to the source NaqsServer and subscribes to one or more data channels using the NaqsServer datastream service. Packets received from the source NaqsServer are then relayed to the receiving NaqsServer via UDP. NaqsToUdp also relays retransmission requests from the receiving NaqsServer back to the source, to ensure full recovery of data which are missed due to any communications outage.

## 1 Installing NaqsToUdp

NaqsToUdp typically is installed on the NaqsServer machine. To simplify the configuration, install and run NaqsToUdp in the same working directory as NaqsServer.

### 1.1 Requirements

- Windows or Solaris operating system
- Java Runtime Environment 1.4.1 or higher
- Patches as may be recommended for the OS and JRE
- Nanometrics DLLs/Libraries 1.8 or higher
- Naqs 1.80 or higher

### 1.2 Install NaqsToUdp

On Windows:

1. From either a command prompt or Windows Explorer, open the installation CD directory **Win32\NaqsToUdp\[version number]**
2. Copy all files from the **bin** directory into the **c:\nmx\bin** directory, and all files from the **user** directory into the **c:\nmx\user** directory (these directories are created on your computer during DLL installation).
3. Check the system path, and add the directory **c:\nmx\bin** if it is not already included.

4. Adjust the configuration parameters as outlined in section 3 “Configuring NaqsToUdp” on page 3.

On Solaris:

See the installation instructions for the acquisition system Solaris workstation.

# 2 Running NaqsToUdp

NaqsToUdp would normally run on the same machine as NaqsServer on the receiving system.

## 2.1 Starting NaqsToUdp manually

- To start NaqsToUdp from the command line, type either:
  **NaqsToUdp**
  or
  **NaqsToUdp *inifile***

where *inifile* is the path to the NaqsToUdp configuration file. If no inifile parameter is specified, NaqsToUdp looks for a file named naqstoudp.ini in its working directory.

## 2.2 Starting NaqsToUdp from Watchdog

In Windows, NaqsToUdp may be automatically started and monitored by the Nanometrics watchdog program by adding the following entry to your watchdog.ini file:

```
[ WatchEntry n ]
ProgramTitle = NaqsToUdp
ProgramPathname = "java -jar c:\nmx\bin\NaqsToUdp.jar [inifile]"
WorkingDirectory = "c:\nmx\user"
ExitAction = Restart
PingsSemaphore = true
StartDelay = 6s
```

## 2.3 Stopping NaqsToUdp

It is important that NaqsToUdp be shut down properly in order for the application to release its system resources.

- To stop NaqsToUdp properly:
  - On Windows, in the NaqsToUdp command window, type **quit <Enter>**
  - On Solaris, in the NaqsToUdp command window, type **stop <Enter>**

## 2.4 Using the NaqsToUdp runtime commands

NaqsToUdp supports a basic keyboard interface for entering runtime commands, with the options described in Table 1-1.

- To enter runtime commands in the NaqsToUdp terminal window, type ***command* <Enter>**

**Table 2-1** NaqsToUdp runtime commands

| To do this... | Type this command... |
|---|---|
| List the channels available for subscription. | C |
| Display all log messages in the log file;<br>set the log verbosity to DEBUG | D |
| Suppress debug messages in the log file;<br>set the log verbosity to VERBOSE | V |
| Suppress debug and verbose messages in the log file;<br>set the log verbosity to INFO | I |
| Move the log file (close the current log and start a new file) | M |
| Report the number of packets received from and sent to source. | R |
| Stop NaqsToUdp and exit: on Windows<br>on Solaris | quit<br>stop |

## 2.5 Monitoring NaqsToUdp operation

NaqsToUdp generates log messages that trace the operation of the program. It displays these messages in the terminal window, and writes them to the NaqsToUdp log file. You can set the level of detail (the verbosity) of the information to be displayed and recorded.

- To view the log, open the log file ***LogFilename_date.log*** (for example, **NaqsToUdp_20031110.log**) in a text editor. The log file name and location are set in the [ Log ] section of the NaqsToUdp configuration file.
- To set the verbosity of log messages on startup, edit the [ Log ] section of the NaqsToUdp configuration file.
- To change the verbosity of log messages while NaqsToUdp is running, use the runtime commands.

# 3 Configuring NaqsToUdp

The operating configuration for the program is specified in the NaqsToUdp inifile. This file contains the following three sections; all entries are required:

- [ Connections ]
- [ Log ]
- [ Channels ]

The format for each naqstoudp.ini entry is ***parameter = value***. For example, **DestinationPort = 32000**. See also the example configuration file in section 4 “Example configuration file” on page 5.

## 3.1 [ Connections ]

The [ Connections ] section defines the hostname and datastream port of the data source, and the hostname and UDP port of the receiving NaqsServer. It contains the parameters described in Table 3-1.

**Table 3-1** [ Connections ] section parameters

| Parameter | Definition |
|---|---|
| SourceHost | The host name or IP address of the machine on which the source NaqsServer is running: For example, SourceHost = naqs.source.net |
| SourcePort | The NaqsServer datastream port of the source acquisition system: For example, SourcePort = 28000 |
| UseCallback | Specifies whether to connect to the source NaqsServer using a callback socket: For example, UseCallback = No<br>• This should be set to “Yes” only if the SocketType parameter on the source NaqsServer is set to “Callback”. |
| DestinationHost | The host name or IP address of the machine on which the receiving NaqsServer is running: For example, DestinationHost = localhost<br>• If NaqsToUdp and the receiving NaqsServer are running on the same machine, this may be set to localhost.<br>• If you wish to make the data available to more than one acquisition system on your local network, this may be a multicast address. |
| DestinationPort | The UDP receive port on the receiving NaqsServer: For example, DestinationPort = 28000.<br>• This should match the NetworkInterface Port parameter in the Naqs.ini file. |

## 3.2 [ Log ]

The [ Log ] section defines the location, name and verbosity of the NaqsToUdp log file. It contains the parameters described in Table 3-2.

**Table 3-2** [ Log ] section parameters

| Parameter | Definition |
|---|---|
| LogFilename | The base filename of the NaqsToUdp log file: For example, LogFilename = NaqsToUdp.log, to create a log file NaqsToUdp_20031110.log |
| LogDirectory | Pathname for the directory in which to store the log file: For example, LogDirectory = logs<br>• Do *not* include the trailing slash. |
| Verbosity | The startup verbosity of the log file (DEBUG, VERBOSE or INFO: For example, Verbosity = Debug<br>• Typical value is INFO. |

## 3.3 [ Channels ]

The [ Channels ] section defines the channels that you want this program to receive. This section may contain any number of entries, one per line. Each channel should be identified using the dotted station/channel name by which the channel is identified on

the source acquisition system; for example, **STN02.bhz**. See also section 4 “Example configuration file”.

- To obtain a list of the available channels, at the NaqsToUdp command window type **c <Enter>**.

# 4 Example configuration file

This section contains an example NaqsToUdp configuration file (naqstoudp.ini). You can edit the naqstoudp.ini file in any text editor.

The inifile reader ignores white space and blank lines, so white space can be added anywhere within the file if desired to improve readability. Also, the inifile reader recognizes the double-slash “//” as a comment delimiter, so comments can be added anywhere in the file. Comments are useful for adding descriptive information to the file, or for temporarily removing parameters or sections from the file.

```
// NaqsToUdp.ini
// Configuration file for NaqsToIni version 1.00

[ Connections ]
SourceHost = naqs.source.net
SourcePort = 28000
UseCallback = No
DestinationHost = localhost
DestinationPort = 32000

[ Log ]
LogFilename = NaqsToUdp.log
LogDirectory = logs
Verbosity = verbose

[ Channels ]
STN02.bhz
STN02.bhn
STN02.bhe
STN02.soh
```