Chapter 3: Capturing and Uploading Waveforms

Capturing and Uploading Waveform Data

NetPower Waveform can capture and upload waveform data from the following IMPACC Devices:

♦ IQ Analyzer

♦ Digitrip 910

♦ Digitrip Optim 1050

♦ MPCV Network Protector

IQ Analyzer

You can configure the IQ Analyzer to capture data automatically in response to certain trigger events. The IQ Analyzer can store up to 10 trigger events at one time.

As each trigger is captured, the IQ Analyzer assigns it a download sequence number to indicate the relative age of the event. When all event positions in the IQ Analyzer are filled, it overwrites the oldest event in the sequence.

You can set the IQ Analyzer to lock the captured data so that the data will not be overwritten.

Note
For information about setting triggers in the IQ Analyzer, see *Chapter 2: Getting Started.*

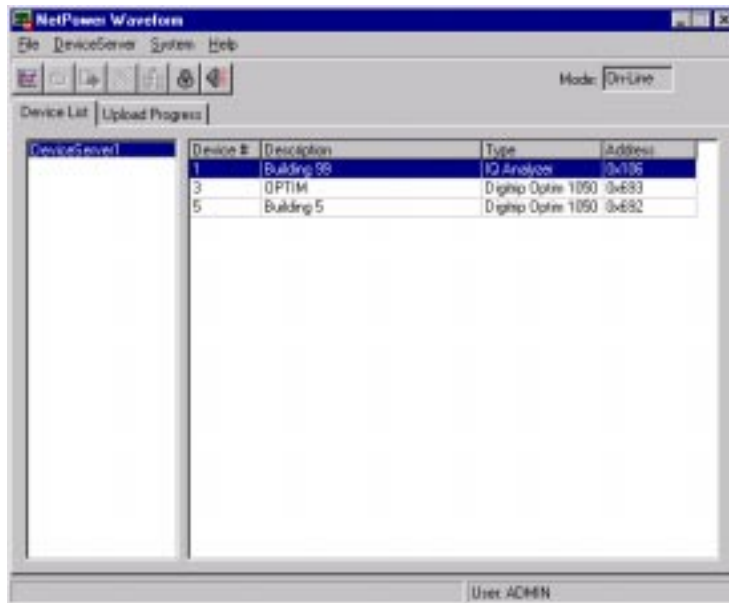You can also manually capture the waveform data for the current conditions.

Manual Waveform Capture

An automatically captured waveform shows the shape of the wave under certain specific conditions. A manual waveform capture shows the wave under the present conditions.

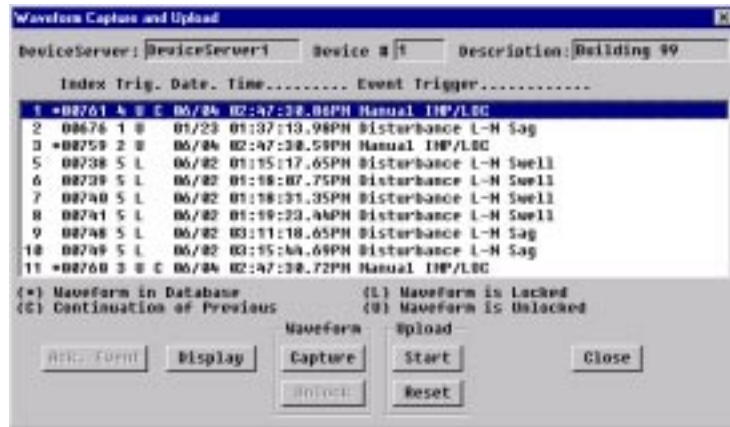To perform a manual waveform capture, do the following:

1. Using NetPower Setpoints & Trip Curve, configure the IQ Analyzer for manual waveform capture.

2. On the NetPower Waveform main window, select the Device List tab.

3. From the list box on the left-hand side, select the NetPower DeviceServer to which the IQ Analyzer device is connected.

   The Device List tab updates to list the devices that support waveforms on the NetPower DeviceServer.

4. From the Device list box, select the IQ Analyzer.

5. Click the Capture/Upload Waveform icon.

   The Waveform Capture and Upload dialog box displays.

Note
You can also double-click on the device field in the NetPower Waveform main window to display the Waveform Capture and Upload dialog box.

The Waveform Capture and Upload dialog box lists the waveform data that has already been captured into the IQ Analyzer's data buffers.

Note
For more information about the Waveform Capture and Upload dialog box, see the section *Waveform Capture and Upload Dialog Box.*

6. Click Capture.

NetPower Waveform sends a request to the IQ Analyzer to capture the waveform data. The data is placed in the next available buffer, and NetPower Waveform updates the Waveform Capture and Upload dialog box accordingly.
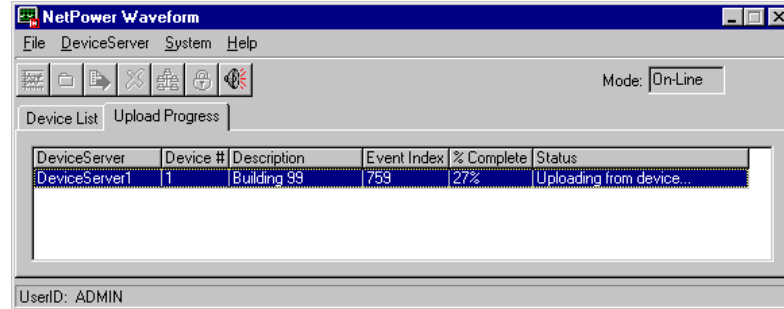
Uploading Waveform Data

To upload waveform data from the IQ Analyzer to a file, do the following.

1. In the Waveform Capture and Upload dialog box, select the waveform you want to upload.

2. Click Start.

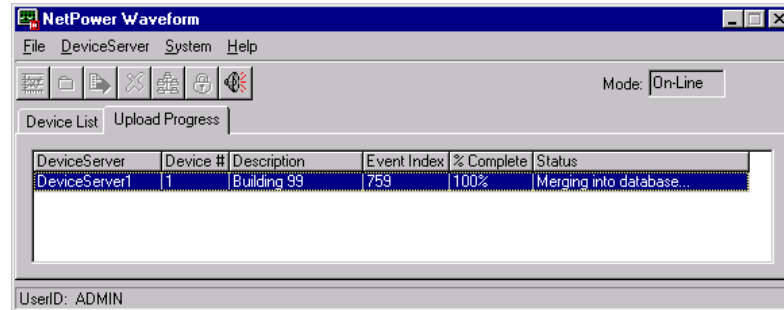3. NetPower Waveform uploads the selected data from the IQ Analyzer.

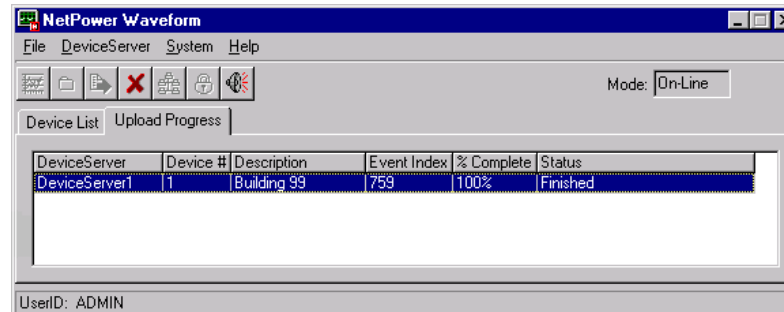   The Upload Progress tab displays, showing the progress of the upload.

When NetPower Waveform completes the upload, it merges the
waveform into the waveform database, and the Upload Progress tab
displays "Merging into database" in the Status field.

When the merge is complete, the Upload Progress tab displays
"Finished" in the Status field.

If you re-display the Waveform Capture and Upload dialog box for the
IQ Analyzer, NetPower Waveform displays an asterisk (*) next to the file
you uploaded. The asterisk indicates that the file is stored in the database.

After you have finished, you can double-click the file name to display the waveform.
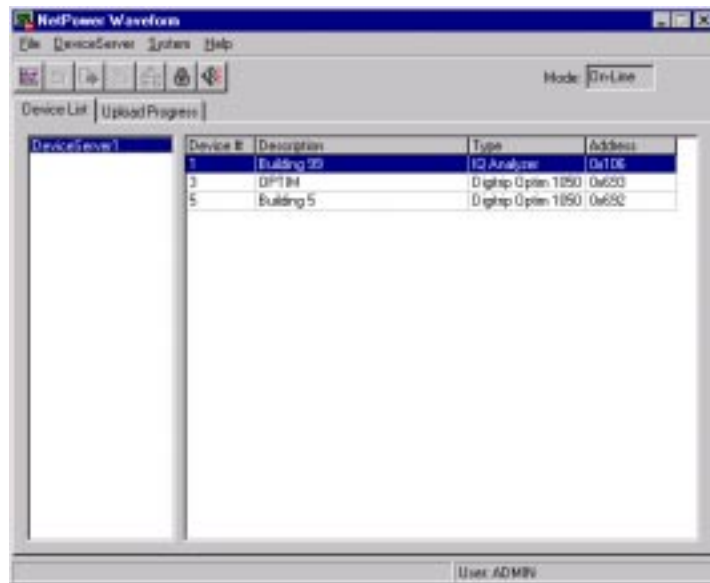
MPCV Network Protector

The MPCV automatically captures waveform data when a trip occurs, and stores this information in a buffer.
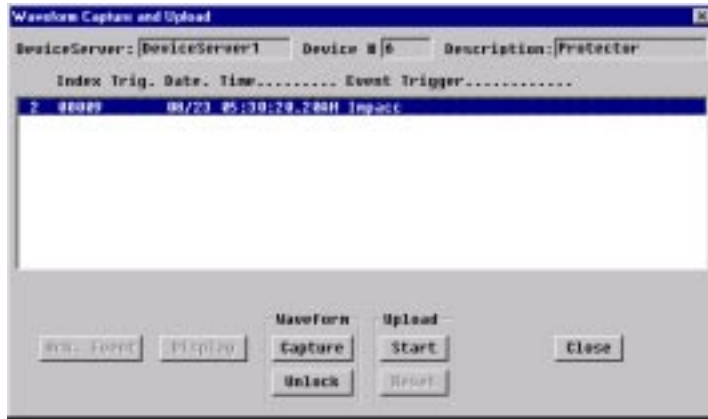
Manual Waveform Capture

To perform a manual waveform capture, do the following:

1. On the NetPower Waveform main window, select the Device List tab.

2. From the list box on the left-hand side, select the NetPower DeviceServer to which the MPCV Network Protector is connected.

    The Device List tab updates to list the devices on the NetPower DeviceServer.

3. From the Device List box, select an MPCV Network Protector from which you want to capture and upload waveform data.

4. Click the Capture/Upload Waveform icon.

    The Waveform Capture and Upload dialog box displays.

Note
You can also double-click on the device field in the NetPower Waveform main window to display the Waveform Capture and Upload dialog box.

The Waveform Capture and Upload dialog box lists any waveform data that has already been captured into the MPCV Network Protector's data buffer.

Note
For more information about the Waveform Capture and Upload dialog box, see the section *Waveform Capture and Upload Dialog Box.*

5.   Click Capture.

NetPower Waveform sends a request to the MPCV Network Protector to capture the waveform data. The data is placed in the MPCV buffer and NetPower Waveform updates the Waveform Capture and Upload dialog box accordingly.
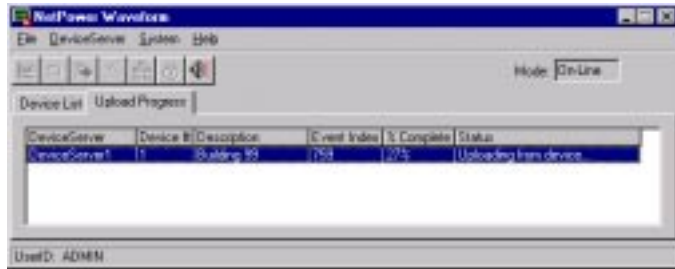
Uploading Waveform Data

To upload waveform data from the MPCV Network Protector to a file, do the following:

1.   In the Waveform Capture and Upload dialog box, select the waveform you want to upload.

2.   Click Start.

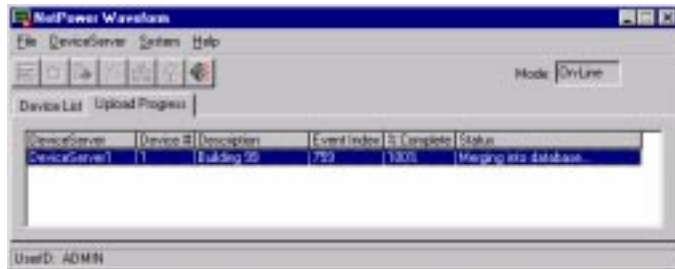3.   NetPower Waveform uploads the selected data from the MPCV Network Protector.

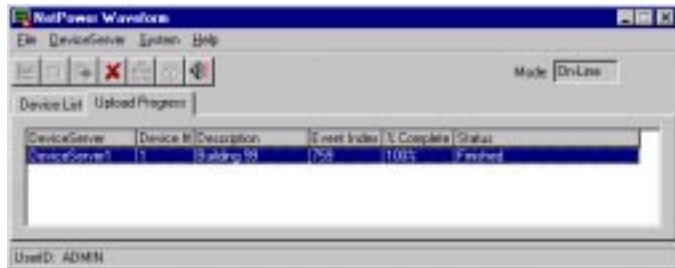   The Upload Progress tab displays, showing the progress of the upload.

Note
You can capture, upload, and view waveform data from devices on other
NetPower DeviceServers while waiting for an upload to complete. You cannot
upload more than one file at a time from a single NetPower DeviceServer.

When NetPower Waveform completes the upload, it merges the
waveform into the waveform database, and the Upload Progress tab
displays "Merging into database" in the Status field.

When the merge is complete, the Upload Progress tab displays
"Finished" in the Status field.

Waveform Capture and Upload Dialog Box

The Waveform Capture and Upload dialog box displays when you click the Capture/Upload Waveform icon. It lists the latest trigger events that the IQ Analyzer or MPCV Network Protector has captured.

The following table describes each column in the Waveform Capture and Upload dialog box.

Column	Description
Index	Lists the capture sequence of the particular waveform data. (IQ Analyzer only) If you have already saved this data, NetPower Waveform displays an asterisk (*) preceding the file code.
Trig.	(IQ Analyzer only) Lists the trigger number, as displayed in the Trigger Dialog box in NetPower Setpoints & Trip Curve.
[Unnamed]	(IQ Analyzer only) The columns between the Trig. And Date columns indicate whether the waveform is locked or unlocked, or if the waveform data is a continuation of a previous capture. ♦ L – Locked. ♦ U – Unlocked. ♦ C – Continuation of a previous capture.
Date	Lists the date of the waveform data capture.
Time	Lists the time of the waveform data capture.
Event Trigger	**IQ Analyzer**: Lists the Trigger Option and Monitored parameter for the waveform data capture. **MPCV Network Protector** Lists the type of trip or "IMPACC," if a manual capture.

Buttons

Button	Description
Ack. Event	Polls the IQ Analyzer for its waveform definition data and updates the Trigger Event summary list with fresh information.
Display	Displays the selected waveform file in graph form. You can only display files that have been uploaded and merged into the database from the device to a hard disk. For more information, see *Chapter 4: Displaying Waveforms.*
Capture	**IQ Analyzer**: Requests that the IQ Analyzer capture waveform data for all manually set triggers. **MPCV Network Protector**: Requests that the MPCV Network Protector capture waveform data.
Unlock	Unlocks the selected waveform. **IQ Analyzer**: If the selected waveform is not locked, this button is grayed-out.
Start	Uploads a waveform from the device.
Reset	Clears the IQ Analyzer and interrupts communications without waiting for the expiration of an internal time-out period. Click this button if a communications problem causes an upload to fail. If the upload hangs, this button has no effect.
Close	Closes the Waveform Capture and Upload dialog box.

Note

In the Waveform Capture and Upload dialog box for the MPCV Network Protector, the Ack. Event, Display, and Reset button are grayed out because these functions are not available for that device.
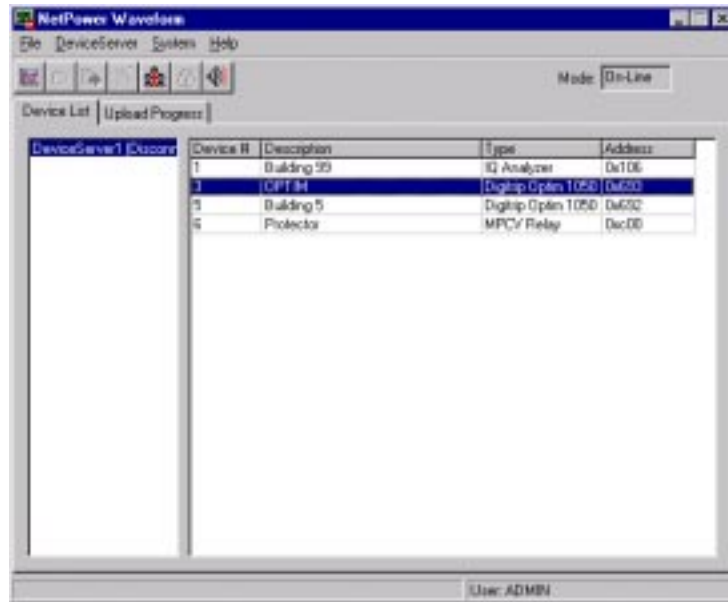
Digitrip 910 and Digitrip Optim 1050 Devices

You can only capture current waveform data from the Digitrip 910 and Digitrip Optim 1050 devices.

To capture and upload waveform data from a Digitrip device, do the following:

1. On the NetPower Waveform main window, select the Device List tab.
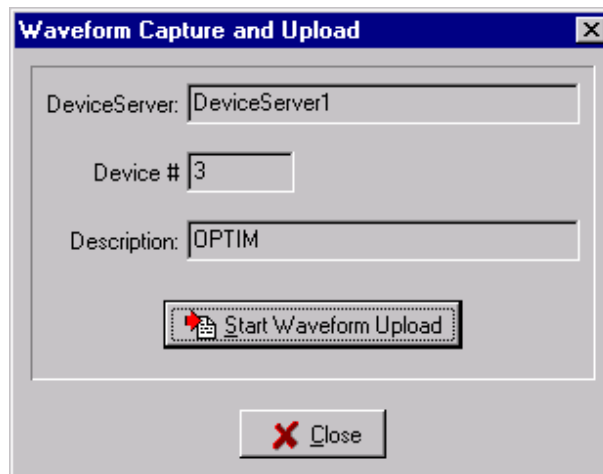
2. On the list box on the left-hand side, click the NetPower
   DeviceServer to which the Digitrip device is connected.

   The Device List tab updates to list the devices on the NetPower
   DeviceServer.

3. In the Device list box, select a Digitrip device for which you want to
   capture and upload a waveform.

4. Click the Capture/Upload Waveform icon.

   The Waveform Capture and Upload dialog box displays.

> **Note**
> You can also double-click on the device field in the NetPower Waveform main window to display the Waveform Capture and Upload dialog box.
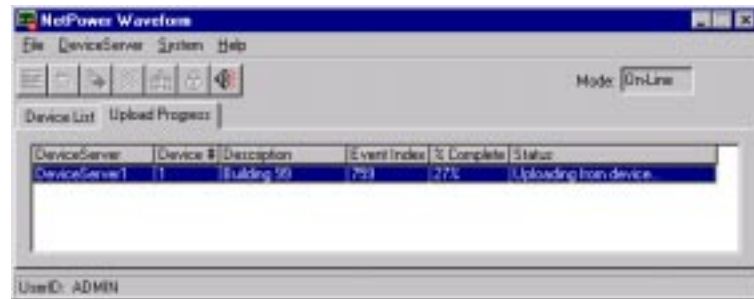
5.   Click Start Waveform Upload.

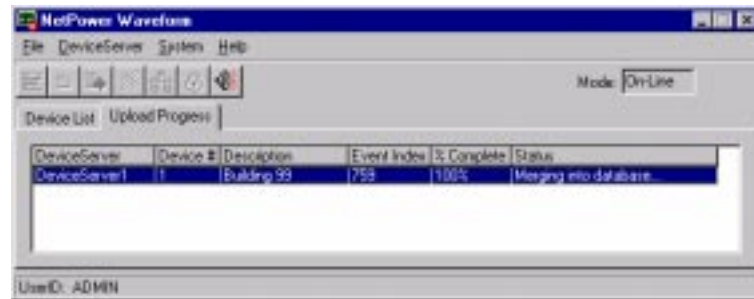A progress box displays, showing the progress of the capture.

After the waveform data is captured, the Upload Progress tab displays, showing the progress of the upload.
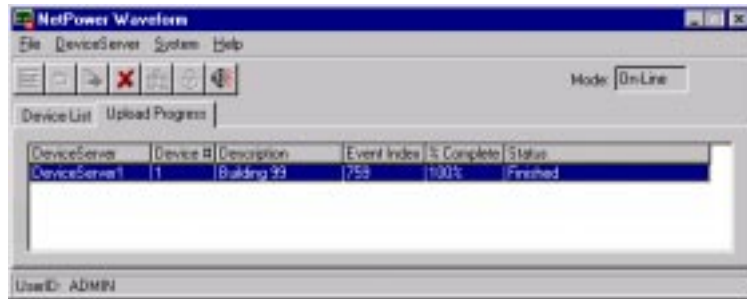
> **Note**
> You can capture, upload, and view waveform data from devices on other NetPower DeviceServers while waiting for an upload to complete. You cannot upload more than one file at a time from a single NetPower DeviceServer.

When NetPower Waveform completes the upload, it merges the waveform into the waveform database, and the Upload Progress tab displays "Merging into database" in the Status field.

When the merge is complete, the Upload Progress tab displays "Finished" in the Status field.
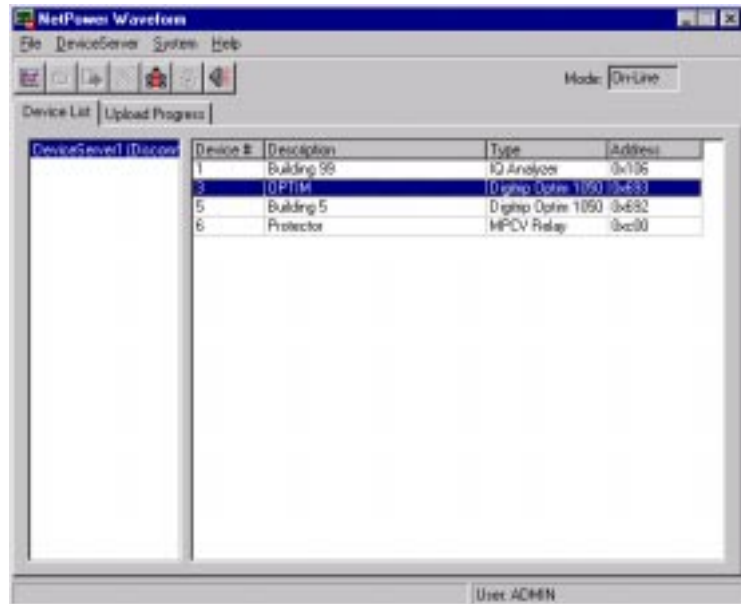
Connecting to a NetPower DeviceServer

When you run NetPower Waveform, the application attempts to connect to every NetPower DeviceServer configured in the Configuration Database. If NetPower Waveform cannot connect to a NetPower DeviceServer, or if a connected NetPower DeviceServer becomes disconnected while NetPower Waveform is running, that NetPower DeviceServer is listed as disconnected in the NetPower DeviceServer list box on the Device List tab. When you select the disconnected NetPower DeviceServer, the Connect NetPower DeviceServer menu option and icon become available.

Note
If the selected NetPower DeviceServer is connected, the Connect NetPower DeviceServer menu option and icon are grayed-out.
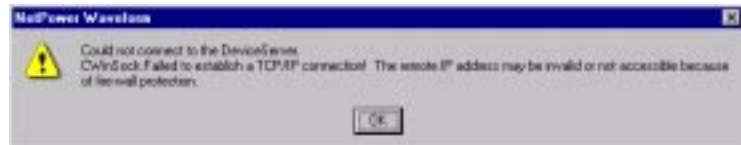
To connect to a disconnected NetPower DeviceServer, do the following:

1. From the list box on the left-hand side of the Device List tab, select the NetPower DeviceServer to which you want to connect.

2. Click the Connect NetPower DeviceServer icon.

   If the NetPower DeviceServer is not available, a dialog box displays, informing you that NetPower Waveform could not connect to the NetPower DeviceServer.

3. Click OK.

   NetPower Waveform remains disconnected from the NetPower DeviceServer, and you cannot capture or upload any waveforms.

4. Try to reconnect to the NetPower DeviceServer after a few minutes. If the NetPower DeviceServer is still inaccessible, contact your System Administrator.

If the NetPower DeviceServer is available, NetPower Waveform connects to the NetPower DeviceServer and the NetPower DeviceServer is no longer listed as disconnected in the NetPower Waveform main window.
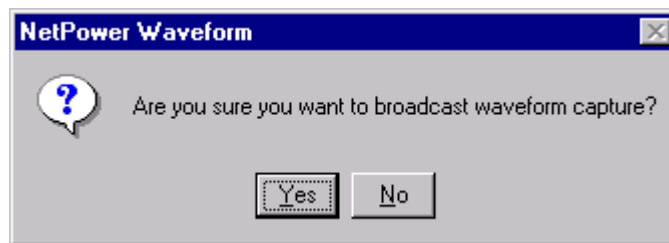
Broadcasting a Manual Waveform Capture

NetPower Waveform can send a waveform capture request to all IQ Analyzers on all connected NetPower DeviceServers simultaneously.

To broadcast a request to capture data, do the following:

1. Click the Broadcast Manual Waveform Capture icon.

    A dialog box displays, verifying the request to broadcast waveform capture.

NetPower Waveform	☒
❓ Are you sure you want to broadcast waveform capture?	
Yes No	

2. Click Yes.

NetPower Waveform broadcasts a request to all IQ Analyzers on all the connected NetPower DeviceServers to manually capture the waveform data.

You must still upload the data from each device individually.