

Chapter 1: Overview

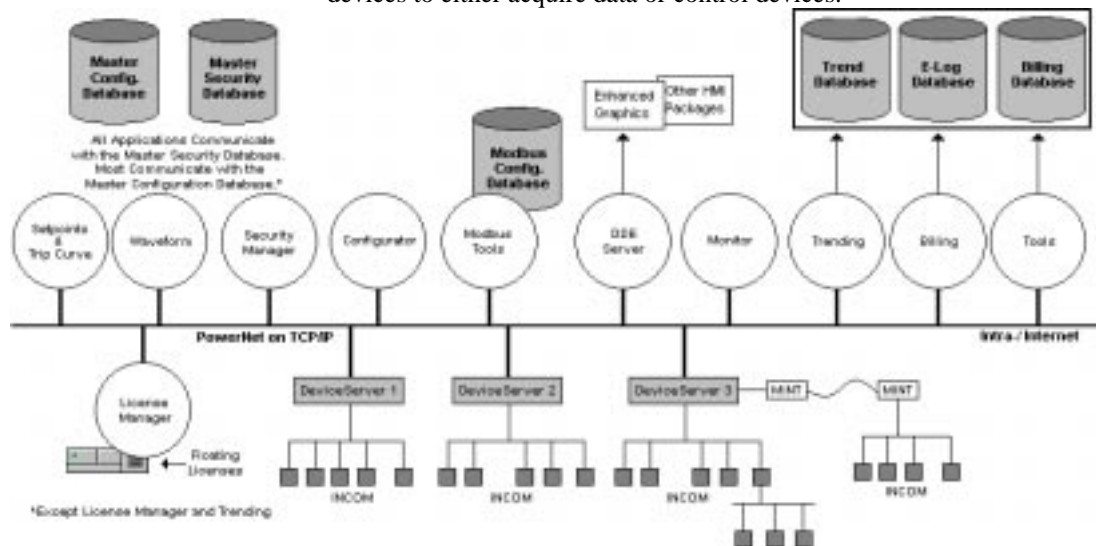
What is PowerNet Software?

The IMPACC PowerNet System is Cutler-Hammer's system of integrated metering, protection, and control devices. PowerNet Software is the family of software products used to monitor those devices.

PowerNet Software is the suite of software applications that allows you to view device data, physically control devices, collect information, compile information, and generate reports.

Distributed Client/Server Architecture

PowerNet Software uses distributed client/server architecture. The individual applications act as clients, sending control commands and requests for information to NetPower DeviceServers. Upon receiving a request from a PowerNet Software application, or based on pre-configured parameters, NetPower DeviceServers communicate with devices to either acquire data or control devices.



The distributed architecture of PowerNet Software allows you to run different applications on one or more computers at the same time. You can also run multiple copies of some applications on different computers, simultaneously. In addition, applications can be run at a remote, networked location (via an intranet or the Internet).

PowerNet Protocol

PowerNet Software uses the PowerNet protocol on a TCP/IP network, such as an intranet or the Internet, to communicate between the applications and NetPower DeviceServers.

PowerNet Protocol provides an efficient, low-resource demand method for the PowerNet Software components to communicate. It is designed to minimize the amount of traffic on the network, while still providing fast and efficient transfer of information between PowerNet Software applications.

Licensing

PowerNet Software uses a floating license system to license the PowerNet Software applications. Each copy of a PowerNet Software application requires a license to run. If you require more licenses, please contact Cutler-Hammer. For more information about the licensing system, see *Chapter 7: NetPower License Manager*.

PowerNet Software Applications

PowerNet Software is comprised of NetPower DeviceServers, which communicate with devices to either acquire data or control devices, and applications that allow you to communicate with the NetPower DeviceServer. Some of the applications allow you to generate reports and bills, based on data collected from devices.

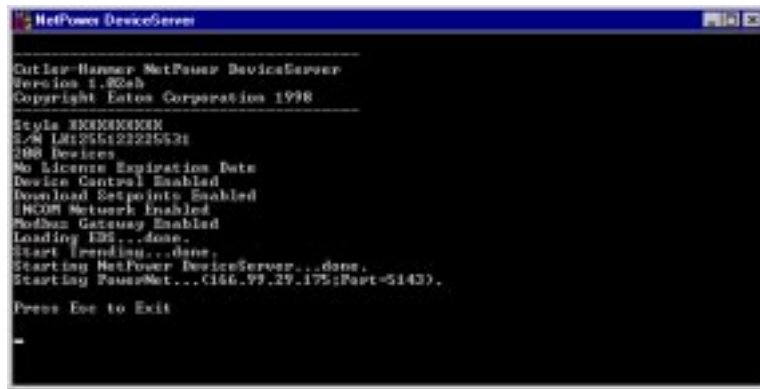
Core Components

The core components are (in most cases) the minimum set of components PowerNet Software requires to run. They include the following:

- ◆ NetPower DeviceServer
- ◆ NetPower Configurator
- ◆ NetPower Setpoints & Trip Curve
- ◆ NetPower Tools
- ◆ NetPower Security Manager
- ◆ NetPower License Manager

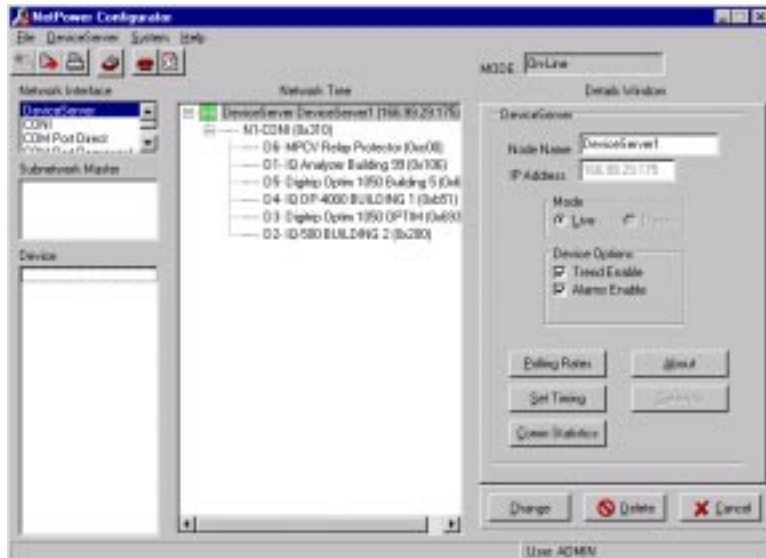
NetPower DeviceServer

NetPower DeviceServer is a server on a PowerNet Software client/server system. It polls for IMPACC device status and data, and transmits information (device control, setpoints, etc.) from applications to specific devices. In addition, NetPower DeviceServer can also act as a Modbus slave.



NetPower Configurator

NetPower Configurator serves as either an on-line or off-line configuration tool to configure any number of NetPower DeviceServers making up a PowerNet Software system.



NetPower Tools

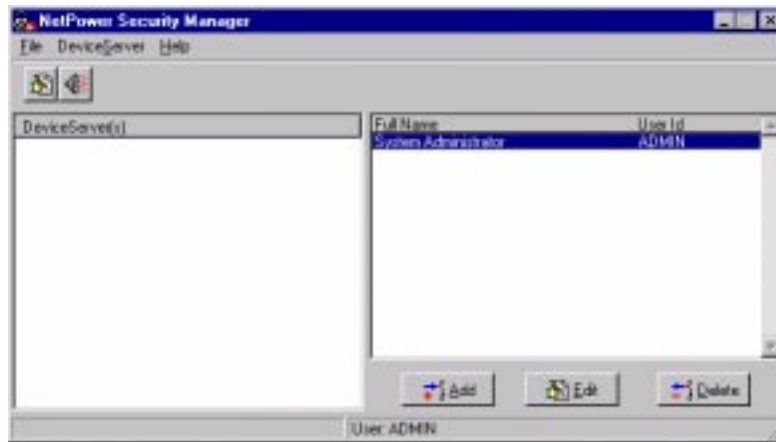
NetPower Tools is a group of integrated utilities designed to automatically merge the device energy, trend, alarm, and event data collected by multiple NetPower DeviceServers into a central database. NetPower Tools is also used to archive central databases, and to allow users to configure the energy logging operation of NetPower DeviceServers.

The screenshot shows the NetPower Tools application window with the following components:

- Title Bar:** NetPower Tools
- Menu Bar:** File, System, Help
- Tabbed Interface:**
 - Alarm:** (Inactive)
 - Waveform:** (Inactive)
 - System Event:** (Inactive)
 - Energy:** (Active, highlighted in red)
 - Time Stamp Event:** (Inactive)
 - Trending:** (Inactive)
- Merge Schedule Section:**
 - Initial Start Time:** 15:14
 - Frequency:** Days: 0, Hours: 2, Minutes: 0
 - Merge Configuration:** Ann1
 - Last Auto Merge:** (Empty text box)
 - Clear** button
- Archive Schedule Section:**
 - Initial Start Time:** :
 - Frequency:** Days: 0, Hours: 0, Minutes: 0
 - Last Auto Archive:** (Empty text box)
 - Clear** button
- Merge Log Section:**
 - Date:** 09/23/1998 Wednesday
 - Time:** 11:48:33
 - Page:** 1
 - Log Area:** (Empty list box with scroll bars)
- Buttons:** Configure Merge, Execute Merge, Configure Archive, Execute Archive
- Status Bar:** User: ADMIN

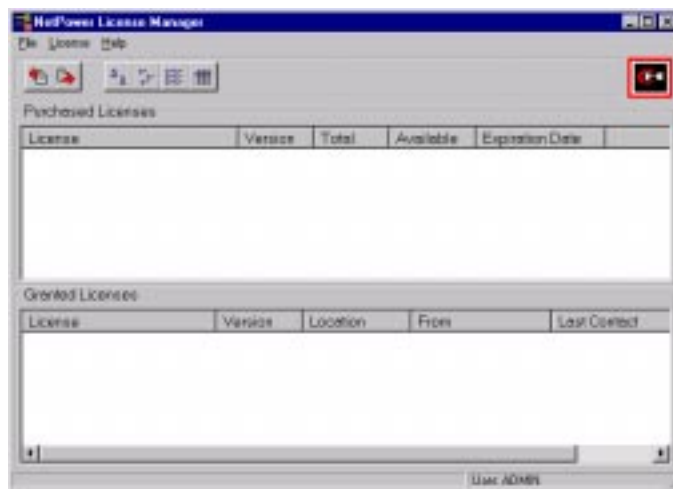
NetPower Security Manager

NetPower Security Manager is the PowerNet Software application used to perform security administration. NetPower Security Manager allows you to assign a unique user ID and password for each PowerNet Software user, designate the functions that each user can access, and limit the devices that each user can access by assigning devices to device classes.



NetPower License Manager

NetPower License Manager is the PowerNet Software application that controls and manages the floating licenses. NetPower License Manager monitors how many purchased licenses for an application are available for check out, which computer licenses have been checked out, and the current status of each license.



Optional Components

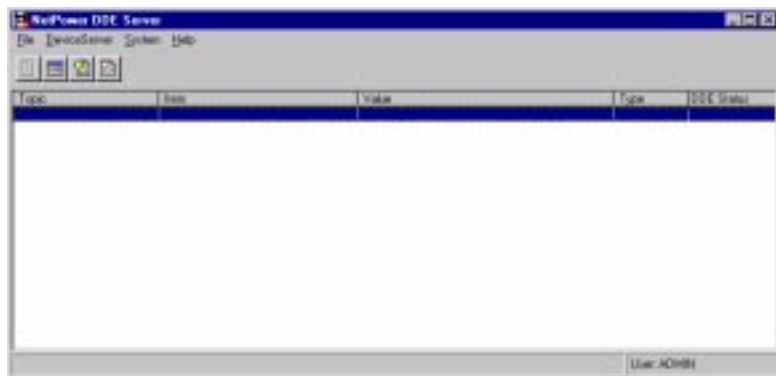
There are several additional applications you can add to the core to customize the PowerNet Software system to your needs. They include the following:

- ◆ NetPower DDE Server
- ◆ NetPower Billing
- ◆ NetPower Trend
- ◆ NetPower Modbus Tools
- ◆ NetPower Monitor
- ◆ NetPower Waveform
- ◆ NetPower Integrator (see the section *NetPower Integrator*)

NetPower DDE Server

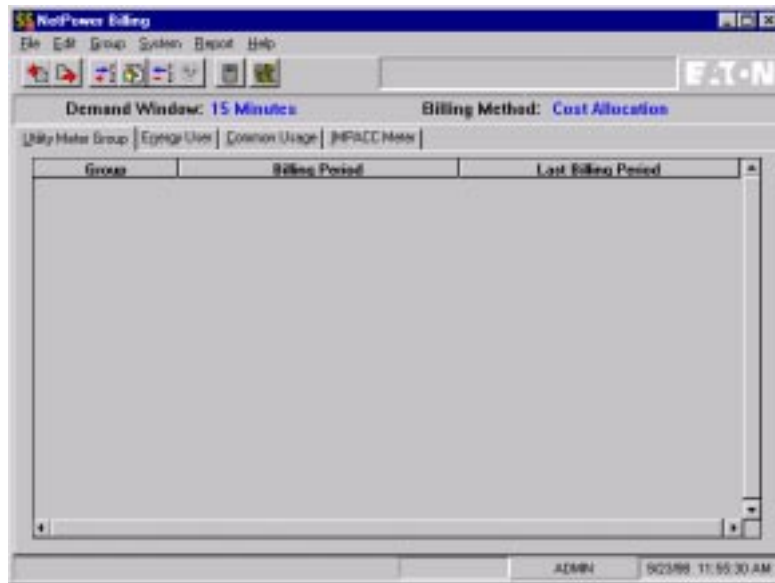
DDE stands for Dynamic Data Exchange, which is a communication protocol supported within the Microsoft Windows operating environment that allows cooperating Windows applications to share information. DDE implements a client/server relationship between concurrently running applications.

NetPower DDE Server is the PowerNet Software application that acts as a DDE server to other DDE clients. NetPower DDE Server accepts requests from DDE clients, then relays the requests to the NetPower DeviceServer, using PowerNet Protocol. When the NetPower DDE Server receives device data from the NetPower DeviceServer, it uses the DDE link to send device data back to the DDE clients.



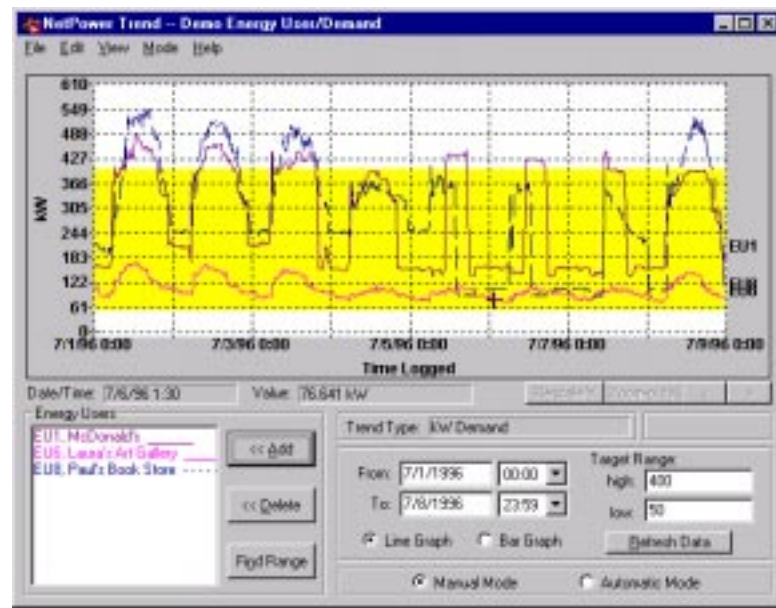
NetPower Billing

NetPower Billing is a billing software package that generates bills for energy consumers based on energy provider metrics (such as rate schedules, rate periods, and seasons) and energy user profile information (such as group charges, individual charges, and individual billing formulas).



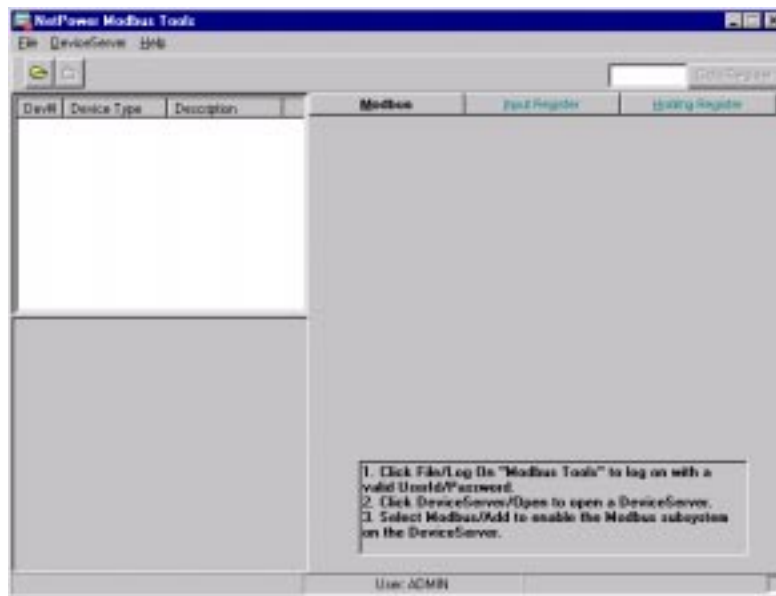
NetPower Trend

NetPower Trend is a PowerNet Software application that graphically displays energy data collected by the NetPower DeviceServer. NetPower Trend plots energy utilization (by kilowatt-hours) or demand (by kilowatts) over time. NetPower Trend can plot energy profiles of loads or combinations of loads, which you can then save for viewing at a later time.



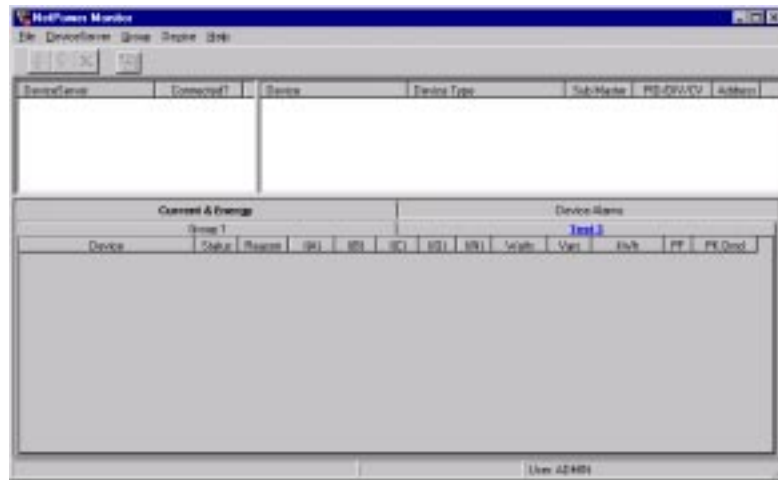
NetPower Modbus Tools

NetPower Modbus Tools is a PowerNet Software application that is used to define Modbus register mapping in NetPower DeviceServers. A NetPower DeviceServer serves as an interface between a Modbus Master and IMPACC devices, and supports a subset of the standard Modbus protocol, which defines how data is transmitted across a serial bus.



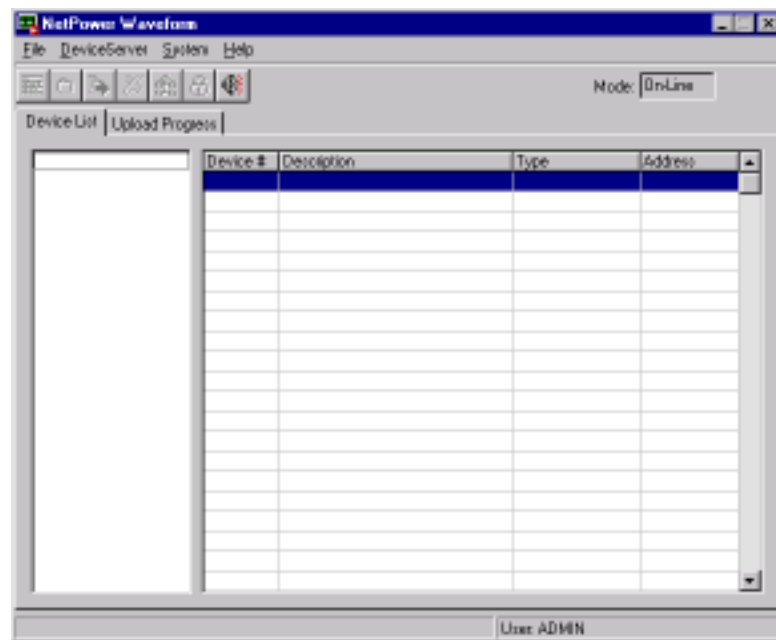
NetPower Monitor

NetPower Monitor is a PowerNet Software application used to monitor and control devices on NetPower DeviceServers. With NetPower Monitor, you can view all the detailed device information, as well as a summary view of current and energy information and device alarm information.



NetPower Waveform

NetPower Waveform is the PowerNet Software application that allows you to command certain IMPACC devices to capture waveform data, to upload the waveform data from devices to a file, and to view a graphical representation of waveform data.

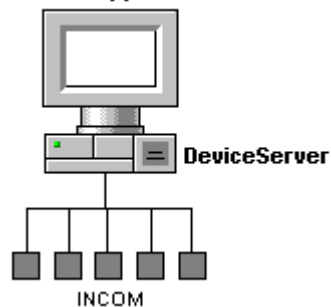


Installation Configurations

The following are examples of PowerNet Software installation configurations.

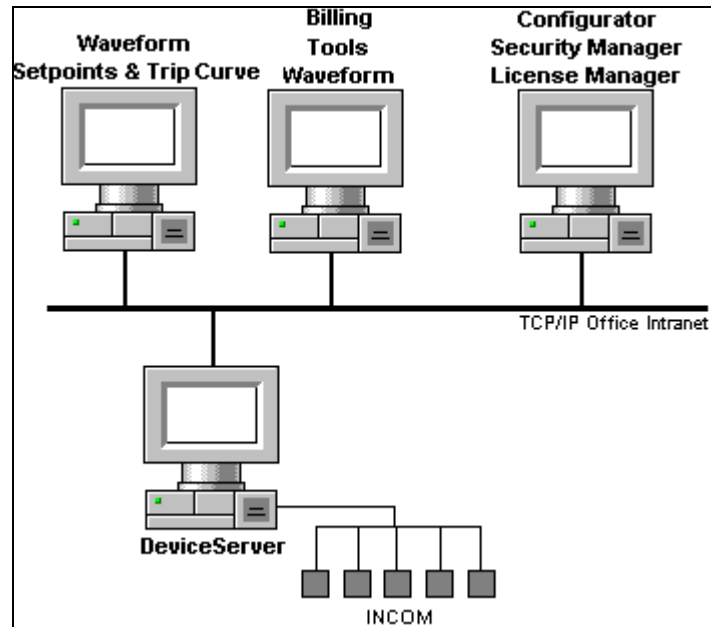
Example 1: Single Computer

Runs all Applications

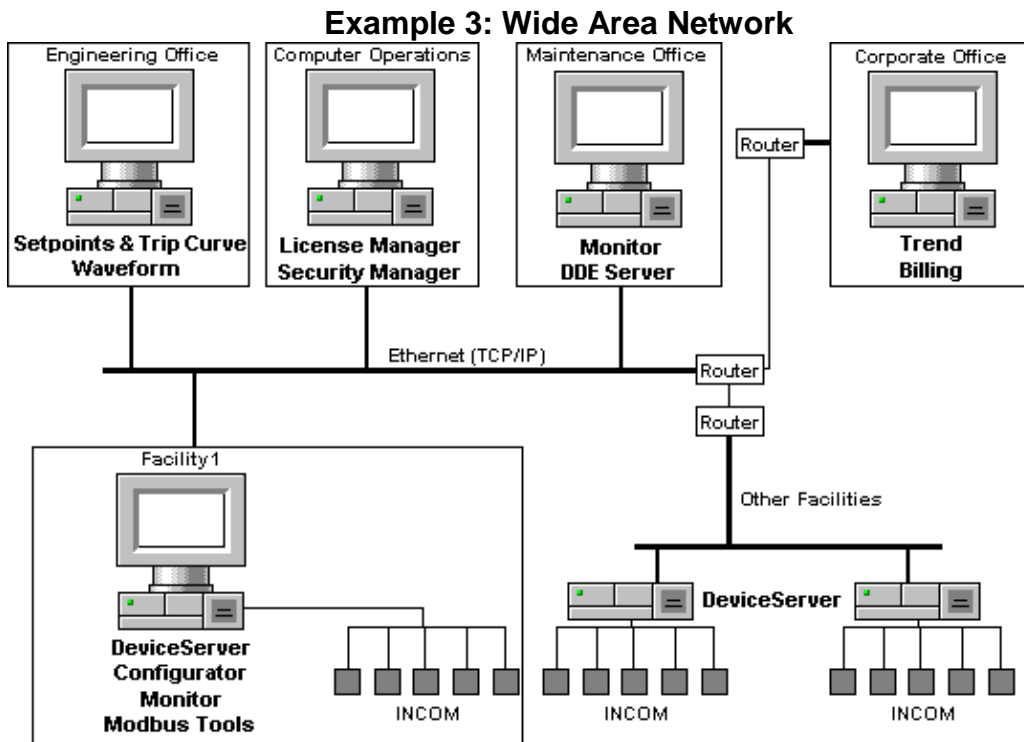


If this computer is on a TCP/IP network, it requires a static IP address.

Example 2: Local Area Network



Static IP addresses are required for the computer running NetPower DeviceServer and for the computer running NetPower Security Manager and NetPower License Manager.



Static IP Addresses are required for computers running NetPower DeviceServer, NetPower License Manager, and NetPower Security Manager.

NetPower Integrator

What Is NetPower Integrator?

NetPower Integrator is an object-oriented graphics program that allows you to create windows to perform various tasks.

How can NetPower Integrator be used with PowerNet Software?

You can use NetPower Integrator to create system drawings, and animate graphics and plots. You can also define custom screen displays. For more information on NetPower Integrator, see the *InTouch User's Manual*.

NetPower Tools uses Microsoft Windows' Dynamic Data Exchange (DDE) to communicate with PowerNet Software. Through DDE, NetPower Integrator can receive data and send commands to IMPACC

devices. This allows you to design graphic windows that can monitor and control your PowerNet Software system.

For more information on using DDE with PowerNet Software and NetPower Integrator, see *Appendix A: PowerNet Software and DDE* in the *NetPower DDE Server User's Guide*.

