

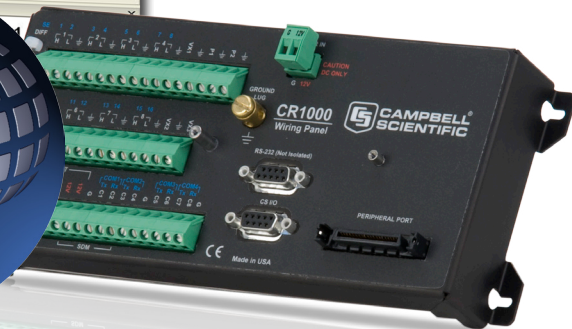
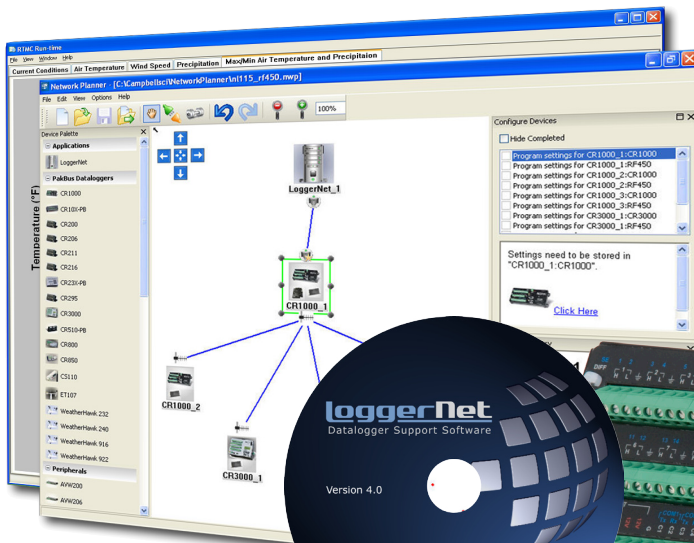


# LoggerNet 4 Series

Datalogger Support Software

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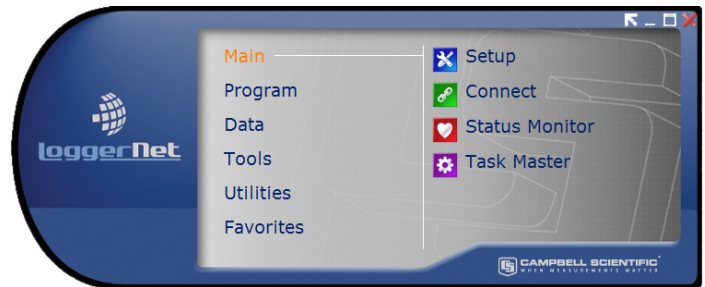
# LoggerNet 4 Series

## The LoggerNet family of datalogger support software

LoggerNet version 4 is Campbell Scientific's latest offering in its suite of datalogger support software packages. LoggerNet 4 is still built on a solid client/server architecture that allows data to be served to multiple LoggerNet clients simultaneously, while featuring a newly designed user-interface and new or updated clients. While the LoggerNet server does the work of communicating with the datalogger network, the client applications are used to manage the network. This includes network setup, configuration, monitoring, and backup; datalogger programming, maintenance, and data collection; and real-time or historical data display.

### Toolbar and Navigation

LoggerNet's Toolbar starts the LoggerNet server and is used to navigate to all the client applications. It has been redesigned to offer quick access to all LoggerNet clients. A new Favorites category has been added to the Toolbar. With the click of a button the Toolbar can be restored down to Favorites view, allowing easy access to those clients most important to your application.



The Toolbar's Full view is shown on top right. The Favorites view reduces the size of the toolbar and provides access to your most-used applications.



### LoggerNet Packages



LoggerNet offers a complementary suite of client applications for datalogger programming, data collection, network monitoring and troubleshooting, and data display. This standard package is recommended for those who have datalogger networks that do not require the more advanced features offered in LoggerNet Admin. LoggerNet 30-day Trial version is available for download.

LoggerNet Admin includes tools that are useful for those with large datalogger networks. It provides all the capabilities of LoggerNet, plus it adds network security, network management from a remote PC, LoggerNet service, data export to third party applications, and the ability to launch multiple instances of the same client (for instance, two Connect windows).

LoggerNet Remote is the full suite of LoggerNet Admin client applications that lets you manage an existing datalogger network from a remote PC. LoggerNet Remote does not include the LoggerNet server or the service.

LoggerNet for Linux provides a solution for those who want to run the LoggerNet server in a Linux environment. The package includes a Linux version of the LoggerNet server and a copy of LoggerNet Remote. LoggerNet Remote's Windows-based clients are used to manage the LoggerNet Linux server and the datalogger network. LoggerNet Linux includes a Debian distribution and two RPM distributions—Red Hat and SUSE.

# Setup and Network Configuration

## Setup

Setup and EZSetup have been combined into one application, providing you with a choice in setting up the datalogger network. EZSetup walks you through the process for each station step-by-step, while Setup allows you more flexibility and access to more advanced features. You can toggle between the two by pressing a button. When in Setup mode, you can choose to view all devices in the network or the datalogger stations only, to make finding a particular station easy.

New features for Setup include the ability to configure a scheduled datalogger network backup, the File Retrieval tab for scheduling retrieval of image or other files from a datalogger, the Notes tab for creating custom notes for a station, and the ability to cut and paste single devices or a branch of the network to another location in the network map. New file output options include support for CSXML and incrementing file names with each data collection from a datalogger.

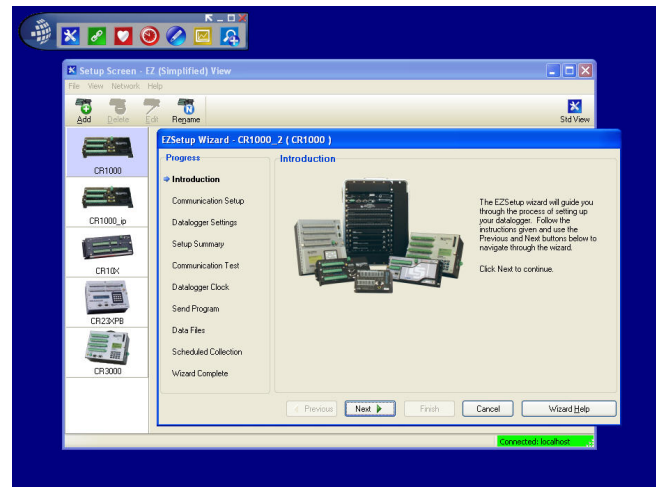
## Task Master

The Task Master allows you to set up events (e.g., running a batch file) that occur on a schedule (interval or calendar) or based on some trigger event such as a successful or failed data collection attempt to a datalogger. LoggerNet 4 Task Master now supports sending files via FTP/SFTP and the new "After File Closed" and "After File Retrieved" trigger events.

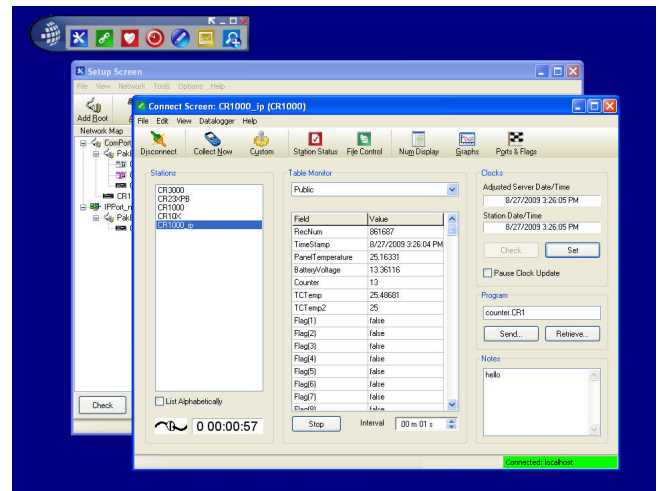
## Network Planner

LoggerNet 4 includes the Network Planner, a new tool for designing your PakBus datalogger network. First, PakBus devices are selected from a list and placed on the network design palette. You then use a link tool to draw lines indicating the physical communication links between devices, and an activity tool to indicate activities that will take place between devices (scheduled data collection, call-back, one-way data messages, or get/set variable transactions between dataloggers).

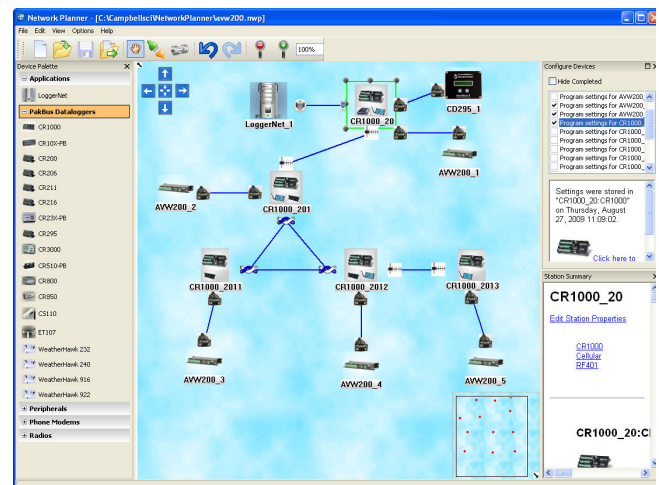
The Network Planner calculates the optimum settings for each device in the network and then allows you to send these settings to the device, or save them for later download via the Network Planner or the Device Configuration Utility. If any change is made to a device in the network, that change is propagated to any other devices in the network that are affected. The configuration can then be imported into LoggerNet's network map, providing a start-to-finish solution for PakBus network setup.



Select the EZSetup to walk through datalogger setup step-by-step.



The standard Setup screen along with the Connect screen are shown above. Notes entered in the Setup screen are displayed in the Connect screen (lower right corner).



The Network Planner generates device settings and configures the LoggerNet network map for PakBus networks.

## Connect and Datalogger Status

### Connect

Connect allows you to perform maintenance on a station (including sending a program and setting the clock) while also viewing important datalogger status information, managing program and other files on a datalogger's CPU, and displaying numerical and graphical data. A new Table Monitor has been designed within the Connect window so that a table can be quickly selected from a drop-down list, and all values from that table displayed. The numerical and graphical displays are fully configurable and now allow saving a configuration that can then be reloaded for the original station or a different station. Any notes that have been added for a station during Setup will be displayed at the bottom right of the Connect window.

### Status Monitor

The Status monitor is used to view the communication and data collection status of the overall datalogger network.

## Advanced Data Display and File Viewing

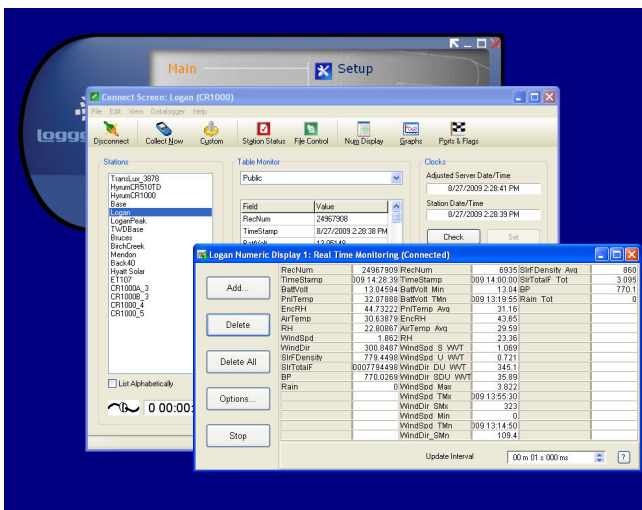
### RTMC Development, RTMC Run-Time

RTMC is used to create custom displays of real-time data, flags, and ports. It provides digital, tabular, graphical, and Boolean data display objects, as well as alarms. You can combine data from multiple dataloggers on one display. Complex displays can be organized on multi-tabbed windows.

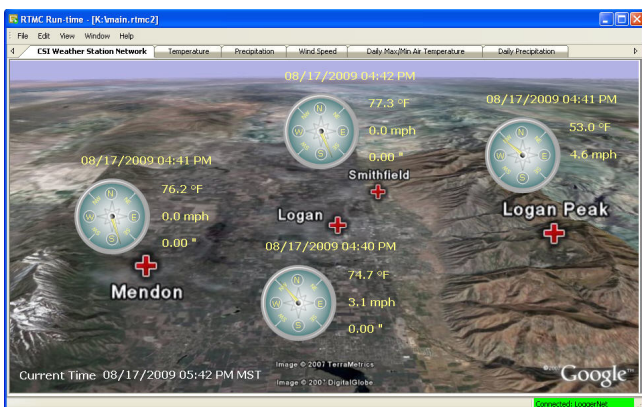
### View Pro

View Pro is our newly designed data file viewer. Beginning with LoggerNet 4.1, View Pro can also be used to view data from a LoggerNet database table. Data can be viewed in numeric format or in one of several graphical layouts, including a line graph, X/Y plot, histogram, rainflow, and 2D/3D FFTs. Multiple data files can be opened at once, allowing side-by-side comparison of the data. There is no limit to the number of traces that can be displayed on a graph.

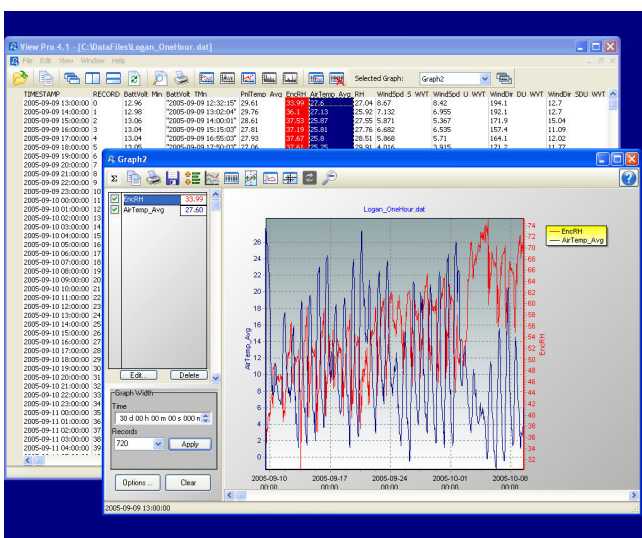
The Zoom feature offers a closer look at important data, and the Statistical window provides the average, standard deviation, minimum, and maximum for all points displayed on a graph. Graphs can be saved to a file (BMP, JPG, WMF, EMF, or PCX). View Pro supports all Campbell Scientific data file types (including the new CSIXML format).



The Connect window's numerical monitor displays real-time and historical data.



RTMC simultaneously displays data from any number of dataloggers on one display.



View Pro displays historical data in a tabular or graphical format.

# Programming

## Full-featured Programming Tools

LoggerNet offers two full-featured programming tools—the CRBasic Editor and Edlog. The CRBasic Editor uses syntax similar to BASIC programming language to provide sophisticated programming capabilities for our CR200-series, CR800/CR850, CR1000, CR3000, CR5000, and CR9000(X) dataloggers. The CRBasic Editor in LoggerNet 4 includes new functionality to support encrypting a file prior to sending it to the datalogger and support for user-defined functions. Edlog provides programming capabilities for our CR500, CR510, CR10(X), 21X, CR23X, and CR7 dataloggers.

## Simple Program Generator

For those who prefer a simpler means of programming their dataloggers, LoggerNet 4 includes Short Cut for Windows (SCWin). SCWin provides a wizard-like interface for generating programs for all Campbell Scientific dataloggers and supports all of the popular sensors we offer, as well as user-created custom sensor files (using an existing sensor file as the starting point). You can use a program as generated by SCWin, or open it in the CRBasic Editor for further editing (for CR200-series, CR800, CR850, CR1000, CR3000, CR5000, and CR9000(X) dataloggers).

# Troubleshooting

## Troubleshooter

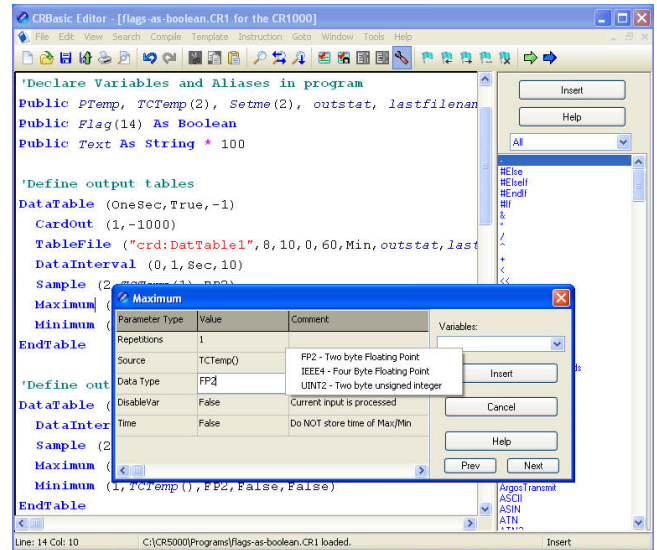
Troubleshooter helps you discover the cause of communication problems. Troubleshooter can be customized to display only the warnings of interest. In addition, you can click on any highlighted warning to bring up a menu that allows you to go to the Setup Screen or Status Monitor to fix the problem, bring up help describing the problem, or, in some cases, fix the problem directly.

## PakBus Graph

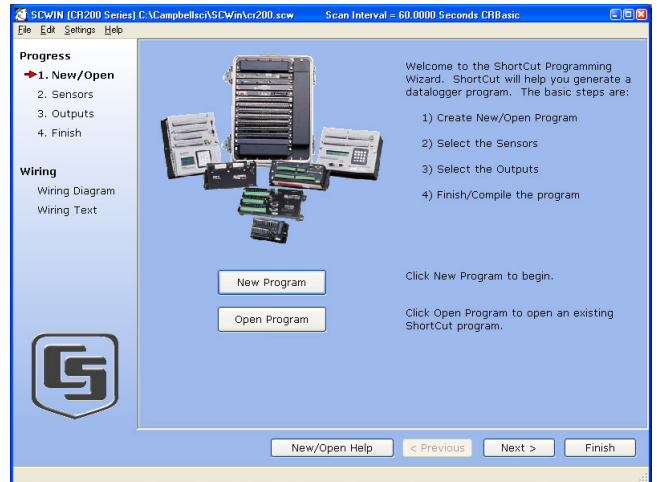
PakBus Graph provides a graphical display of a PakBus network as known by the LoggerNet server, and quick access to the PakBus settings in LoggerNet and other PakBus devices.

## LogTool

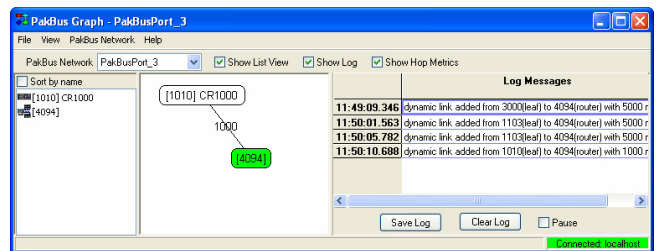
The LogTool application is available to view operational log messages for the server as well as the low-level communication between the datalogger and the server.



CRBasic Editor offers keyword and other syntax highlighting and a parameter dialog box with drop-down lists for CRBasic programming.



Short Cut provides a wizard-like interface for generating datalogger programs.



Troubleshooter, PakBus Graph (shown above), and Log Tool are tools available for monitoring the status of a datalogger network and troubleshooting communication problems within that network.



DevConfig is used to configure dataloggers, communication devices, and programmable sensors.



The RWIS Administrator supports communication with RWIS weather stations such as the one shown above.

## Other Applications

### *Device Configuration Utility (DevConfig)*

DevConfig allows you to send new operating systems to dataloggers and other devices with flash memory, configure various PakBus® settings in dataloggers, and edit settings for communication peripherals such as the MD485 and RF401. DevConfig can now be launched from within LoggerNet, without conflict with the remainder of the datalogger network. The latest DevConfig can be downloaded from our website.

### *RWIS Administrator*

New in LoggerNet 4 is the RWIS Administrator. With the RWIS Administrator, LoggerNet is able to communicate with any station that implements the NTCIP (National Transportation Communications for ITS Protocol) Environmental Sensor Station interface.

### *Card Convert*

CardConvert is used to convert and save binary data from a PC Card or CompactFlash® (CF) card. It can also perform other conversions. PC Cards are compatible with our CR5000 and CR9000X dataloggers. CF cards are compatible with our CR1000, CR3000, CR5000, and CR9000X dataloggers.

### *Split*

Split is used to post-process data files and create printed reports. It sorts and combines data based on time or conditions, performs calculations on data values, converts between mixed-array "day of year" calendar dates and more traditional date/time stamps, and generates simple HTML-formatted reports.

### *Transformer*

The Transformer tool converts Edlog programs to CRBasic programs. Specifically, it can convert a CR510 or CR10X program to a CR1000, CR800, or CR850 program, or a CR23X program to a CR3000 program.

### *Data Filer (LoggerNet Admin and LoggerNet Remote only)*

Data Filer is an application used to retrieve data from the LoggerNet server's data cache and save that data to a file. It provides a way to manually retrieve data from a remote LoggerNet server and store the data on the local computer.

## Data Export (LoggerNet Admin and LoggerNet Remote only)

Data Export is an application used to export data from the LoggerNet server's data cache to a third party computer program. Data Export "listens" for a request from another application and sends the requested data via a socket connection.

## Service Manager (LoggerNet Admin only)

Service Manager is used to install LoggerNet as a service, and to manage the service on the PC. When run as a service, after a power failure, LoggerNet will resume data collection and scheduled task activities when power is restored to the computer—regardless of whether or not a user logs on to the computer.

## Security Manager (LoggerNet Admin and LoggerNet Remote only)

Security Manager is used to set up security within the LoggerNet application to restrict access to certain functions. Individual user accounts are set up and assigned one of five levels of security, with different user privileges assigned to each level.

## LoggerNet Server Monitor (LoggerNet Admin and LoggerNet Remote only)

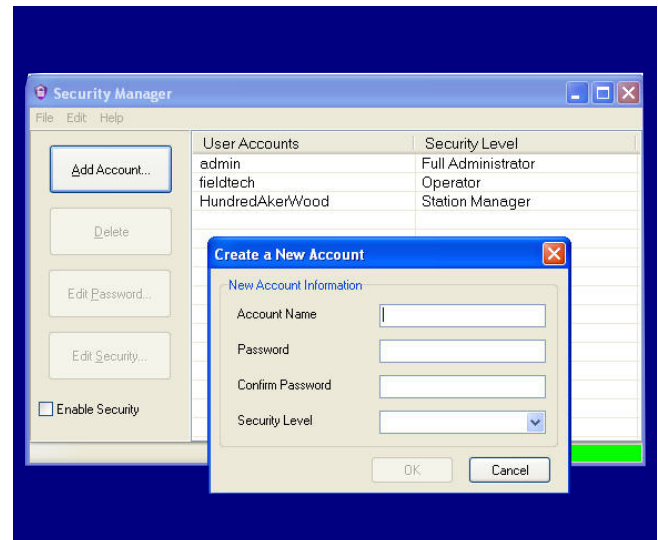
The LoggerNet Server Monitor is a utility that runs minimized with an icon in the Windows Status Area. It monitors the status of a LoggerNet server when it is being run as a service or being run on a remote computer. Multiple instances of the LoggerNet Server Monitor can be launched to monitor more than one server running on remote computers.

## Hole Monitor (LoggerNet Admin and LoggerNet Remote only)

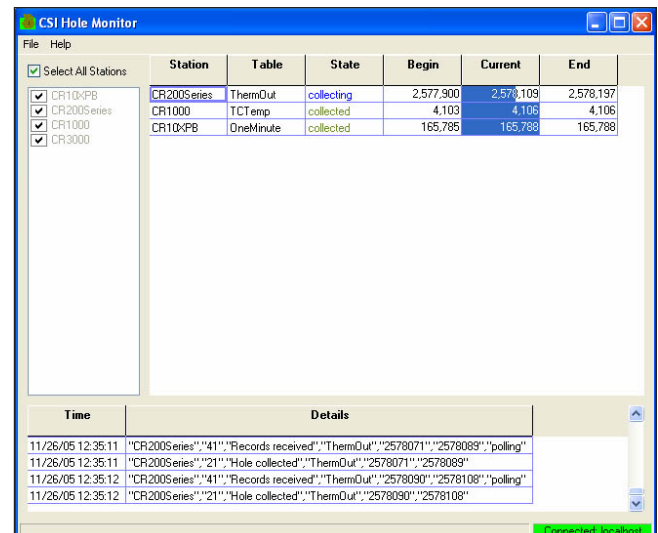
The Hole Monitor is used to monitor the hole collection activity for the dataloggers in a LoggerNet network. Holes are most often encountered with data collected from table-based dataloggers via data advise (data advise is used for data collection in large table-data RF networks). A hole occurs when there are missing records of data in the LoggerNet server's data cache for a datalogger.

## CoraScript

CoraScript is a command line scripting tool, which can be used to configure the datalogger network from a command prompt.



Security Manager lets you set up multiple security accounts for access to the datalogger network.



The Hole Monitor lists datalogger stations and collection status for missing records in LoggerNet's data cache.

### Computer Requirements

LoggerNet is a collection of 32-bit programs designed to run on Intel-based computers running Microsoft Windows operating systems. The recommended minimum computer configuration for running LoggerNet is Windows XP. LoggerNet also runs on Windows Vista and Windows 7.

## Upgrades

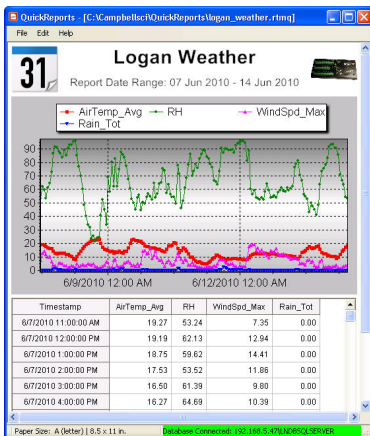
Upgrade pricing is available for current licenses of any version of LoggerNet or PC400. Contact Campbell Scientific for details.

## Software Developers Kits

LoggerNet-SDK and LoggerNet Server-SDK allow software developers to create custom applications that communicate with the LoggerNet server and through the server to one or more dataloggers. Refer to the Software Development Kit product brochure for more information.

## Separately Purchased Clients

Several clients may be purchased to add functionality to our LoggerNet and LoggerNetAdmin software packages. To use the clients, a licensed copy of the datalogger support software needs to be running on a PC. Functions supported by these clients include distributing data to remote files, OPC interface, PC displays, and web browsers. For more information, refer to: [www.campbellsci.com/loggernet-clients](http://www.campbellsci.com/loggernet-clients)



LNDB is one of the client applications available for use with LoggerNet.

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- (2) This software cannot be loaded on a network server for the purposes of distribution or for access to the software by multiple operators. If the software can be used from any computer other than the computer on which it is installed, you must license a copy of the software for each additional computer from which the software may be accessed.
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- (4) This software package is licensed as a single product. Its component parts may not be separated for use on more than one computer.
- (5) You may make one (1) backup copy of this software onto media similar to the original distribution, to protect your investment in the software in case of damage or loss. This backup copy can be used only to replace an unusable copy of the original installation media.

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