Installation Guide



LoggerNet for Linux

Revision: 03/2025 Copyright © 2006 – 2025 Campbell Scientific, Inc.





Campbell Scientific, Inc. Software End User License Agreement (EULA)

COPYRIGHT: This software is protected by United States copyright law and international copyright treaty provisions. This software may not be sold, included or redistributed in any other software, or altered in any way without prior written permission from Campbell Scientific. All copyright notices and labeling must be left intact.

NOTICE OF AGREEMENT: Please carefully read this EULA. By installing or using this software, you are agreeing to comply with the following terms and conditions. If you do not want to be bound by this EULA, you must promptly return the software, any copies, and accompanying documentation in its original packaging to Campbell Scientific or its representative.

This software can be installed as a trial version or as a fully licensed copy. All terms and conditions contained herein apply to both versions of software unless explicitly stated.

TRIAL VERSION: Campbell Scientific distributes a trial version of this software free of charge to enable users to work with Campbell Scientific data acquisition equipment. You may use the trial version of this software for 30 days on a single computer. After that period has ended, to continue using this product you must purchase a fully licensed version.

This trial may be freely copied. However, you are prohibited from charging in any way for any such copies and from distributing the software and/or the documentation with any other products (commercial or otherwise) without prior written permission from Campbell Scientific.

LICENSE FOR USE: Campbell Scientific grants you a non-exclusive license to use this software in accordance with the following:

- 1. The purchase of this software allows you to install and use a single instance of the software on one physical computer or one virtual machine only.
- 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.

- 3. If this copy of the software is an upgrade from a previous version, you must possess a valid license for the earlier version of software. You may continue to use the earlier copy of software only if the upgrade copy and earlier version are installed and used on the same computer. The earlier version of software may not be installed and used on a separate computer or transferred to another party.
- 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.

Limited warranty

The following warranties are in effect for ninety (90) days from the date of shipment of the original purchase. These warranties are not extended by the installation of upgrades or patches offered free of charge:

Campbell Scientific warrants that the installation media on which the software is recorded and the documentation provided with it are free from physical defects in materials and workmanship under normal use. The warranty does not cover any installation media that has been damaged, lost, or abused. You are urged to make a backup copy (as set forth above) to protect your investment. Damaged or lost media is the sole responsibility of the licensee and will not be replaced by Campbell Scientific.

Campbell Scientific warrants that the software itself will perform substantially in accordance with the specifications set forth in the instruction manual when properly installed and used in a manner consistent with the published recommendations, including recommended system requirements. Campbell Scientific does not warrant that the software will meet licensee's requirements for use, or that the software or documentation are error free, or that the operation of the software will be uninterrupted.

Campbell Scientific will either replace or correct any software that does not perform substantially according to the specifications set forth in the instruction manual with a corrected copy of the software or corrective code. In the case of significant error in the installation media or documentation, Campbell Scientific will correct errors without charge by providing new media, addenda, or substitute pages. If Campbell Scientific is unable to replace defective media or documentation, or if it is unable to provide corrected software or corrected documentation within a reasonable time, it will either replace the software with a functionally similar program or refund the purchase price paid for the software.

All warranties of merchantability and fitness for a particular purpose are disclaimed and excluded. Campbell Scientific shall not in any case be liable for special, incidental, consequential, indirect, or other similar damages even if Campbell Scientific has been advised of the possibility of such damages. Campbell Scientific is not responsible for any costs incurred as a result of lost profits or revenue, loss of use of the software, loss of data, cost of re-creating lost data, the cost of any substitute program, telecommunication access costs, claims by any party other than licensee, or for other similar costs.

This warranty does not cover any software that has been altered or changed in any way by anyone other than Campbell Scientific. Campbell Scientific is not responsible for problems

caused by computer hardware, computer operating systems, or the use of Campbell Scientific's software with non-Campbell Scientific software.

Licensee's sole and exclusive remedy is set forth in this limited warranty. Campbell Scientific's aggregate liability arising from or relating to this agreement or the software or documentation (regardless of the form of action; e.g., contract, tort, computer malpractice, fraud and/or otherwise) is limited to the purchase price paid by the licensee.

Table of contents

1. Introduction	1
1.1 LoggerNet Server	1
1.2 CoraScript Interpreter	1
1.3 Logger Data Monitor Protocol Server (LDMP)	. 1
1.4 Logger Data Export Protocol Server (LDEP)	2
2. Requirements	2
3. Installing Loggernet for Linux	2
3.1 RPM installation	2
3.1.1 Locate the RMP for your distribution	2
3.1.2 Log in as a root user	3
3.1.3 Use RPM to install software	3
3.1.4 Alternatives to the RPM command line	3
3.2 DEB installation	4
3.2.1 Locate the DEB file	4
3.2.2 Log in as a root user	4
3.2.3 Use dpkg to install the software	4
3.2.4 Alternatives to the dpkg command line	4
4. What the RPM/DEB installs	5
5. Usage notes	5
5.1 Starting and stopping the daemons	5
5.2 Configuring the server	6
5.3 Command line options	7
5.4 Configuring the export daemons	7
5.5 Running CoraScript	8

1. Introduction

LoggerNet for Linux is a port (that is, feature-equivalent implementation) of the Campbell Scientific LoggerNet server product and some clients to the Linux Operating System. This package does not provide Linux based GUI client applications to administer the LoggerNet server or to monitor data from the same. These client applications are available in LoggerNet Remote software under Windows and are able to communicate with a Linux based LoggerNet server. Therefore, a copy of LoggerNet Remote should be purchased with LoggerNet for Linux. Additional information on the LoggerNet Remote clients can be found in the LoggerNet manual. The following services are provided by LoggerNet for Linux:

1.1 LoggerNet Server

Provides communication with the dataloggers over various media including serial ports, TCP/IP connections, and Linux compatible phone modems. Besides services provided to LoggerNet clients, this server also provides automatic (scheduled) data collection. This program is installed as a daemon and will be automatically started when the host computer is started.

1.2 CoraScript Interpreter

This native Linux client connects to the server and, through command line interaction with the user, allows the user to administer the LoggerNet network map including settings and allows the user to perform maintenance operations on devices such as program file send, clock check/set, etc.

1.3 Logger Data Monitor Protocol Server (LDMP)

This native Linux client provides a simple text-based protocol to export data from the LoggerNet server via TCP connections as that data is collected. This server can be configured to allow the connecting client to specify what data will be sent and supports any number of concurrent client connections. For more information on running this server, see Configuring the export daemons (p. 7).

1.4 Logger Data Export Protocol Server (LDEP)

This native Linux client provides a simple text-based protocol to export data from the LoggerNet server via TCP connections as that data is collected. This server differs from the monitor server in that it supports only one client connection at a time and the data that is sent is dependent upon its command line options and the data that it has previously sent. For more information on running this server, see Configuring the export daemons (p. 7).

2. Requirements

LoggerNet for Linux has the following Linux version requirements.

Table 2-1: Linux version requirements	
OS	x86_64 Version
Debian	≥ 10.0
Ubuntu	≥ 16.04
CentOS/RHEL	≥ 7.0
Fedora	≥ 19

LoggerNet for Linux depends on the "curl", "libcurl3", and "zip" packages. If these packages are not already installed on your Linux system, please install them.

3. Installing Loggernet for Linux

3.1 RPM installation

3.1.1 Locate the RMP for your distribution

Locate the RPM file, loggernet-redhat_*_x86_64.rpm. The RPM file is located in the root directory of the LoggerNet Linux CD-ROM.

3.1.2 Log in as a root user

The RPM utility requires root privileges on the host computer in order to change the state of the RPM database. You can gain root privileges by using the su command or by logging in to a terminal as the root user.

3.1.3 Use RPM to install software

The following command line demonstrates use of the RPM utility to install LoggerNet for Linux:

```
rpm --install loggernet-redhat_4.3-10_x86_64.rpm
```

NOTE: The RPM filename contains version and revision numbers, and, therefore, may differ from that shown above.

If you receive dependency error messages from RPM when installing the LoggerNet package, you may try to use yum to install. Yum will install the LoggerNet package and attempt to download and install all missing dependencies. Example:

yum install loggernet-redhat_4.3-10_x86_64.rpm

The RPM utility can also be used to upgrade an already installed version by replacing the --install option with the --upgrade option on the command line. The utility can also be used to delete the package by using the following command line:

rpm --erase loggernet

NOTE: Starting in RHEL 7, init.d scripts were converted to systemd services. However, init.d scripts can still function, as RedHat maintained compatibility with older software still using init.d scripts. For now, we have continued to use init.d scripts with LoggerNet to be compatible with as many operating systems as possible. However, the init.d/functions that LoggerNet relies on no longer come standard within most RHEL instances. They can be manually obtained using the command:

yum install -y initscripts

3.1.4 Alternatives to the RPM command line

Instead of installing from the command line, most Linux distributions now provide a GUI program that performs the same types of operations. On CentOS, for instance, the Package Manager application can be accessed by clicking the **Add/Remove Software** item on the **System** >

Administration menu. Note that you will still be required to provide the password for the root account in order to use this application.

3.2 DEB installation

3.2.1 Locate the DEB file

Locate the DEB file, loggernet-debian_*_x86_64.deb. The DEB file is located in the root directory of the LoggerNet Linux CD-ROM.

3.2.2 Log in as a root user

The dpkg utility requires root privileges on the host computer in order to change the state of the DEB database. You can gain root privileges by using the su or sudo command or by logging in to a terminal as the root user.

3.2.3 Use dpkg to install the software

The following command line demonstrates use of the dpkg utility to install LoggerNet for Linux:

dpkg --install loggernet-debian_4.3-10_x86_64.deb

NOTE: The DEB filename contains version and revision numbers, and, therefore, may differ from that shown above.

If you receive dependency error messages from dpkg when installing the LoggerNet package, you may try to use apt-get with the "-f" argument to resolve missing dependencies. Example:

apt-get install -f

The dpkg utility can also be used to delete the package by using the following command line:

dpkg --remove loggernet

3.2.4 Alternatives to the dpkg command line

Instead of installing from the command line, most Linux distributions now provide a GUI program that performs the same types of operations. Note that you will still be required to provide the password for the root account in order to use this application.

4. What the RPM/DEB installs

Installing the LoggerNet for Linux RPM or DEB results in the following actions:

- Copies binary executables and user documentation to the /opt/CampbellSci/LoggerNet directory.
- Copies configuration files to the /etc/opt/CampbellSci directory.
- Copies daemon init scripts to directories appropriate for your distribution and registers the csilgrnet, csildep, and csildmp daemons so that these will start automatically when the host operating system boots.
- Creates the loggernet user and makes that user a member of the uucp and dialout groups (this action provides access to serial ports without needing permissions on those device files to be re-assigned).
- Ensures that the LoggerNet working directory at /var/opt/CampbellSci/LoggerNet is created and that the loggernet user is the owner of that directory.

5. Usage notes

5.1 Starting and stopping the daemons

The details of starting and stopping daemon processes can be distribution specific. The daemons can be started or stopped by invoking their init scripts with appropriate command arguments. The following example demonstrates this using the csilgrnet daemon:

/etc/init.d/csilgrnet start This example shows how the service can be started.

Note that this must be run with root privileges. The daemon can be stopped by replacing the command, start, with the command, stop. Alternatively, some distributions provide a service manager GUI application to start and stop daemons. In CentOS, this can be accessed by choosing System > Administration > Services from the desktop menu.

5.2 Configuring the server

The configuration options for the server are in the csi_registry.xml file found in /etc/opt/CampbellSci. The WorkDir value under the HKEY_LOCAL_

MACHINE/SOFTWARE/Campbell Scientific/LoggerNet/4.6 key path specifies the working directory that the LoggerNet server will use for its configuration and data files. The IpPort value under the same key will tell the server the TCP port on which it is to offer its service. If this value is not specified, the value will default to a value of 6789.

If you change any of these values in the registry, it will be necessary to re-start the server daemon in order for these changes to be effective. This process is described in the previous section.

NOTE: The AppDir and WorkDir registry values are there by default. The IpPort registry value is not.

Depending on selections made during the operating system install, a firewall application may have been enabled by default on the Linux PC. The firewall was enabled to protect the PC from invasion by outside, unauthorized programs that may try to connect via a socket using TCP/IP. Remember, however, that LoggerNet is a client-server application that uses TCP/IP as the link between clients and the server. This means that the LoggerNet Remote clients for Windows such as Setup, Connect, Status, RTMC, etc., need to access the LoggerNet server on Linux via a TCP port. Therefore, you must allow remote TCP connections for the specific server port, 6789 by default, access through any firewall on the LoggerNet server PC or on the network between the remote client PC and the LoggerNet server PC.

You should read the installation guide for your distribution of Linux to understand the firewall application and how to grant or deny access for the LoggerNet server TCP port.

Once remote TCP connections to the LoggerNet server are allowed through the firewall, the LoggerNet Remote Windows clients can access the LoggerNet server on Linux by specifying the IP address or qualified domain name of the LoggerNet server PC. If you don't know the IP address of your Linux PC, the "ifconfig" or "ip a" command issued in a terminal window will display the IP address and properties of the network interfaces.

NOTE: By default, security is disabled in the LoggerNet server, which means all LoggerNet Remote clients can access the LoggerNet server with full administrator rights. If security is a concern, use the Security Manager client in LoggerNet Remote to enable security in the LoggerNet server. For more information, read the section about the Security Manager in the LoggerNet manual.

5.3 Command line options

Advanced Linux administrators may have reasons to modify the provided init scripts, create their own, or use other methods for launching the daemon. The csilgrnet executable supports the following command line options:

--IpPort=xxxx: Specifies the TCP port to which the server will be bound.

--WorkDir=path: Specifies the directory where the server will store its working directory (usually in sys/bin relative to the AppDir).

--AppDir=path: Specifies the directory where the server will write, by default, such things as data files.

--IpBindAddress=aaa.bbb.ccc.ddd: Specifies the address of the interface to which the server will be bound. If empty, the server will bind to all available interfaces.

--logFileDir=path: Specifies the directory where the server will write its log files.

--run-as-daemon=<true|false>: Specifies whether the program should run as a daemon. When true, this will force the program to fork, set the umask, call setsid(), and to detach its I/O handles.

5.4 Configuring the export daemons

The LoggerNet data export daemons, LDMP and LDEP, are described inLogger Data Monitor Protocol Server (LDMP) (p. 1) and Logger Data Export Protocol Server (LDEP) (p. 2).

When starting the daemons, the init scripts csildep and csildmp use settings from the configuration files Idep.conf and Idmp.conf respectively (located in /etc/opt/CampbellSci). You can use a text editor to examine the comments within these configuration files to understand what options are available. Online documentation (in PDF format) is also available for these daemons in the /opt/CampbellSci/LoggerNet directory. You may need to disable these daemons from starting automatically if you do not require them for the operation of your system.

Depending on selections made during operating system installation, SELinux may be enabled on the Linux PC. SELinux limits the actions of both users and programs by enforcing security policies throughout the operating system. One policy for SELinux does not allow ports at or under 1024 to be opened by a non-root process. Since the default port used by LDMP, 1024, falls within that range of disallowed ports, you must either change the ldmp.conf file to use a different port or you must disable or change the SELinux policies before the LDMP daemon will start. You should read the installation guide for your distribution of Linux and understand SELinux if you plan to make changes or disable this security feature.

5.5 Running CoraScript

The CoraScript interpreter executable is /opt/CampbellSci/LoggerNet/cora_cmd and can be run with no special permissions using that path on the command line. It is recommended that an alias be created as follows:

```
alias cora_cmd=/opt/CampbellSci/LoggerNet/cora_cmd
```

By placing this line in your .bashrc file, you will be able to run cora_cmd without always specifying the path.

Global Sales and Support Network

A worldwide network to help meet your needs



Campbell Scientific Regional Offices

Australia

Location:	Garbutt, QLD Australia
Phone:	61.7.4401.7700
Email:	info@campbellsci.com.au
Website:	www.campbellsci.com.au

Brazil

Location:	São Paulo, SP Brazil
Phone:	11.3732.3399
Email:	vendas@campbellsci.com.br
Website:	www.campbellsci.com.br

Canada

Location:	Edmonton, AB Canada
Phone:	780.454.2505
Email:	dataloggers@campbellsci.ca
Website:	www.campbellsci.ca

China

Location:	Beijing, P. R. China
Phone:	86.10.6561.0080
Email:	info@campbellsci.com.cn
Website:	www.campbellsci.com.cn

Costa Rica

Location:	San Pedro, Costa Rica
Phone:	506.2280.1564
Email:	info@campbellsci.cc
Website:	www.campbellsci.cc

France

Location:	Montrouge, France
Phone:	0033.0.1.56.45.15.20
Email:	info@campbellsci.fr
Website:	www.campbellsci.fr

Germany

Location:	Bremen, Germany
Phone:	49.0.421.460974.0
Email:	info@campbellsci.de
Website:	www.campbellsci.de

India

Location:	New Delhi, DL India
Phone:	91.11.46500481.482
Email:	info@campbellsci.in
Website:	www.campbellsci.in

Japan

Location:	Kawagishi, Toda City, Japan
Phone:	048.400.5001
Email:	jp-info@campbellsci.com
Website:	www.campbellsci.co.jp

South Africa

Location:	Stellenbosch, South Africa
Phone:	27.21.8809960
Email:	sales@campbellsci.co.za
Website:	www.campbellsci.co.za

Spain

Location:	Barcelona, Spain
Phone:	34.93.2323938
Email:	info@campbellsci.es
Website:	www.campbellsci.es

Thailand

Location:	Bangkok, Thailand
Phone:	66.2.719.3399
Email:	info@campbellsci.asia
Website:	www.campbellsci.asia

UK

Location:	Shepshed, Loughborough, UK
Phone:	44.0.1509.601141
Email:	sales@campbellsci.co.uk
Website:	www.campbellsci.co.uk

USA

Location:	Logan, UT USA
Phone:	435.227.9120
Email:	info@campbellsci.com
Website:	www.campbellsci.com