**User Manual**

**Private Server**

**for WISE-4000 Series**

**(Node.js version)**

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**Chapter** **1**

# Introduction

## About This Manual

This document describes the installation and usage of sample Private Server (Node.js version) for Advantech WISE-4000 series IoT Wireless I/O Module products.

For WISE-4000 series, system log could be sent to a private log server instead of a public log server (for example: DropBox). A private log server is a web server which accepts a client’s log via http or https protocol. These logs include Push Notification Logs(IO data and System Event, both in JSON format) and Upload files(IO data and System Event, both in csv format). In this document, we will describe the steps of building a simple Private Log Server by using Node.js.

Node.js is a platform built on Chrome's JavaScript runtime engine for easily building fast, scalable network applications. Node.js can be installed on Windows, MAC OS X, Linux, Solaris and FreeBSD.

## Organization of This Manual

This user manual is divided into the following sections:

* Introduction
* Installations
* Start Running Private Server
* Troubleshooting

**Introduction** This section gives the user a basic idea of this manual.

**Installations** This section provides instructions on how to install Private Server required software packages.

**Start Running Private Server** This section gives the new user a walk-through in running private server.

**Troubleshooting**

This section provides instructions on how to troubleshooting for operation mistakes or errors.

**Chapter** **2**

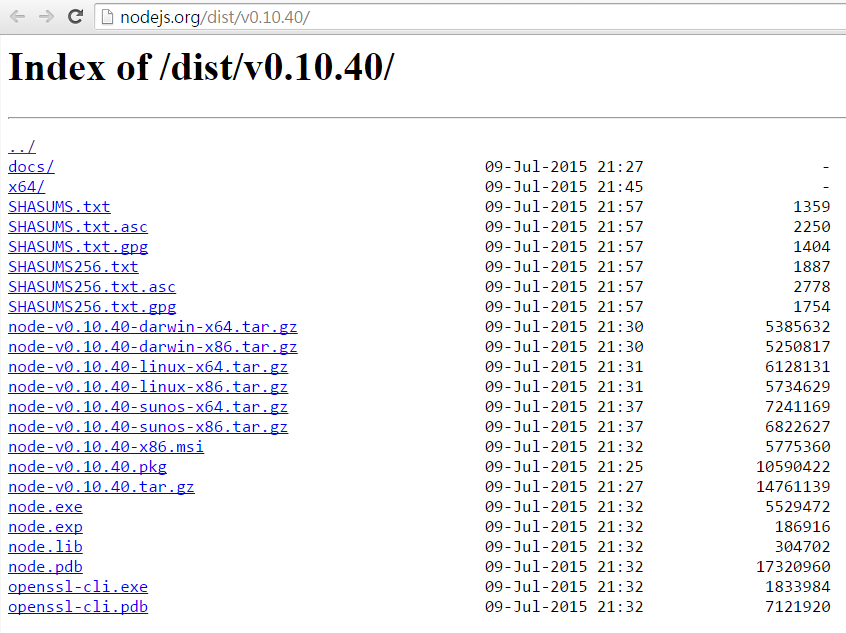
# Installations

Before running sample Private Server, there are some software you have to install on your PC.

## Private Server using Http protocol

First of all, you have to download Node.js software from following Node.js web site:

<http://nodejs.org/dist/v0.10.40/>



You must download the corresponding software depending on your operating system. For example, you could download *node-v0.10.40-x86.msi* if you are using Microsoft Windows. After download is finished, please install it.

## Private Server using Https protocol

If you want to build a private server using https, you have to install OpenSSL software in addition to software described in Chapter 2.1. Please download OpenSSL in following web url:

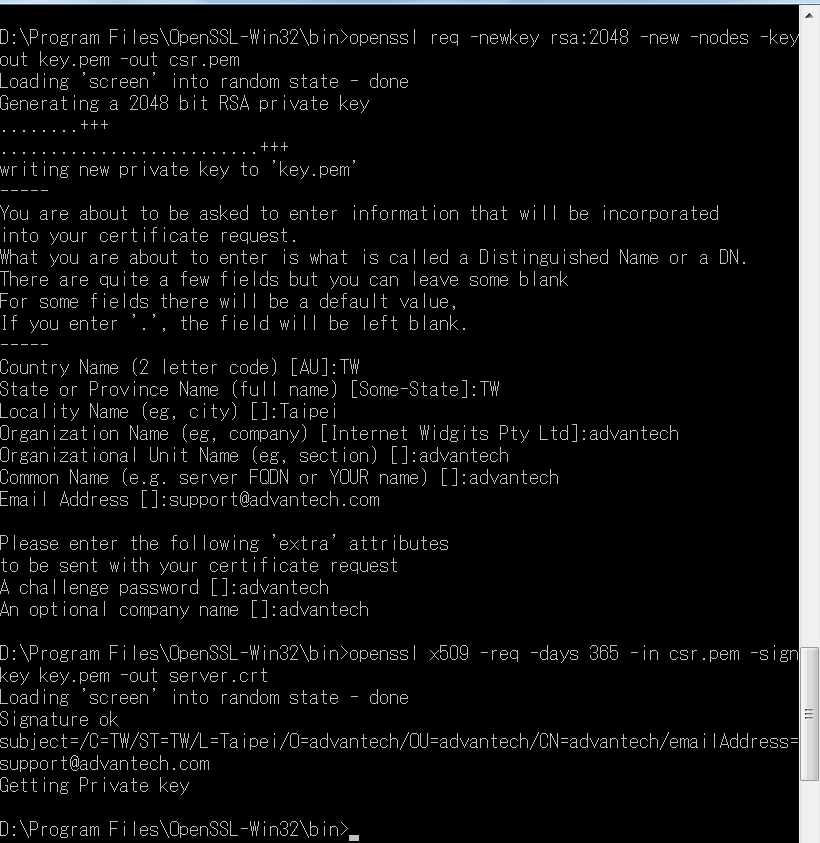
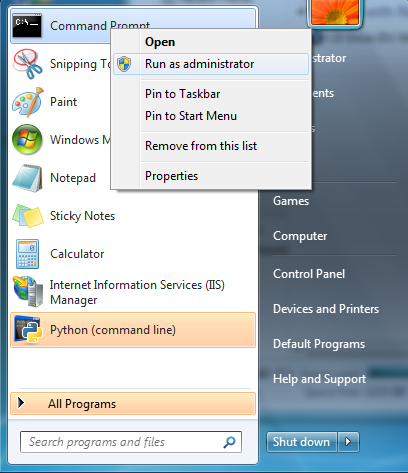
<https://slproweb.com/products/Win32OpenSSL.html>

You must download the software depending on your operating system. For example, you can choose “OpenSSL for Windows” and download *Win32\_OpenSSL\_-v.\_0.2g\_Light.exe* if you are using Microsoft Windows 32 bits. After download is finished, please install it.

After OpenSSL is installed, you have to generate private key file and certification file for Https web server. Please run command prompt as Administrator and use following commands to generate private key file and certification file.

1. set OPENSSL\_CONF=c:\OpenSSL-Win32\bin\openssl.cfg (Please modify directory for your environment)
2. openssl req -newkey rsa:2048 -new -nodes -keyout key.pem -out csr.pem
3. openssl x509 -req -days 365 -in csr.pem -signkey key.pem -out server.crt

There are several questions you have to answer during the generation process. Following figures are for your reference:



After finish executing above two commands, you will get two files: key.pem and server.crt. Please put these two files into the folder where you run Advantech sample private server.

**Chapter** **3**

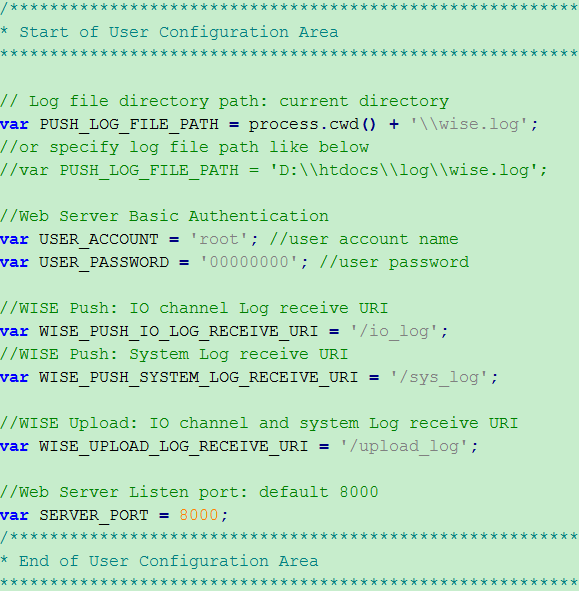
# Start Running Private Server

If you finish installing software described in Chapter 2, please proceed following steps to run sample private server.

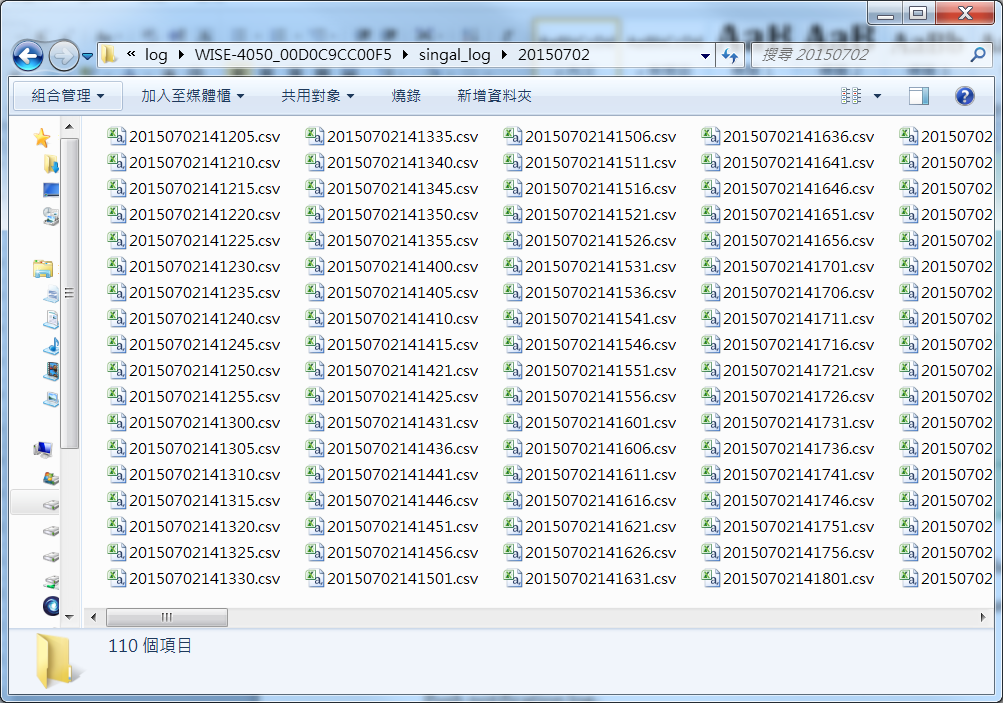
## Private Server Configuration

Several parameters of Private Server could be modified, please use text editor to open App.js and refer to below table and figure:

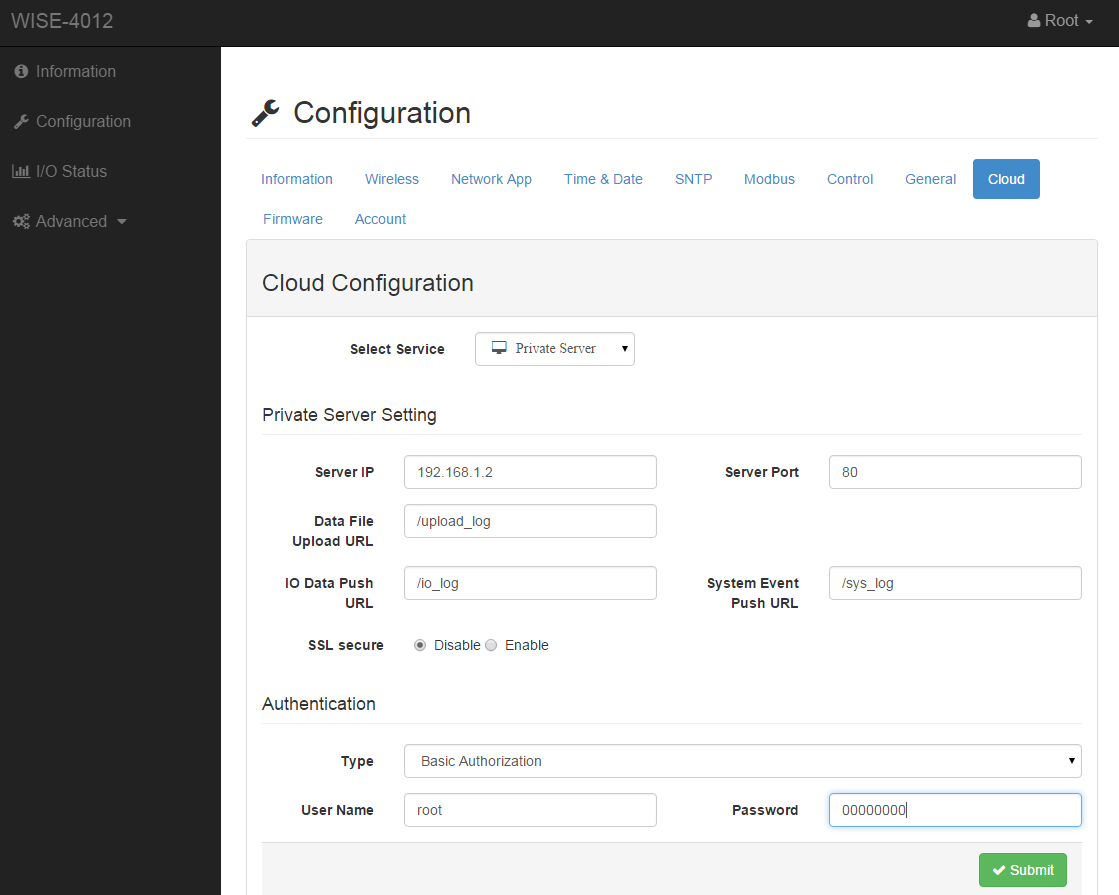
|  |  |
| --- | --- |
| Variable | Description |
| USER\_ACCOUNT | User account for Private Serve Web page login. |
| USER\_PASSWORD | User password for Private Serve Web page login. |
| PUSH\_LOG\_FILE\_PATH | The file which stores WISE device’s push notification data(includes IO data and System Event). |
| WISE\_PUSH\_IO\_LOG\_RECEIVE\_URI | Private Server Web URL which receives WISE device’s push notification of IO data (JSON format). |
| WISE\_PUSH\_SYSTEM\_LOG\_RECEIVE\_URI | Private Server Web URL which receives WISE device’s push notification of System event (JSON format). |
| WISE\_UPLOAD\_LOG\_RECEIVE\_URI | Private Server Web URL which receives WISE device’s data file (csv format) upload. |
| SERVER\_PORT | Private Server Web TCP/IP Listen Port Number. |



The above setting will save IO data and System Event log in wise.log file. The Push notification log will be saved in the path where sample program is located. Following figure shows Push notification files received by Private Server.

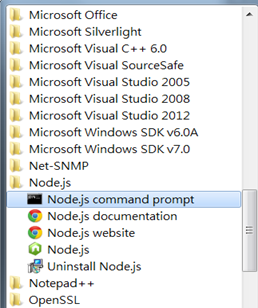


Please make sure you have performed the corresponding Private Server configuration in WISE device. Please refer to the following figure:



## For Private Server using Http protocol

Step 1: Execute Node.js command prompt from Windows “Start Menu”.

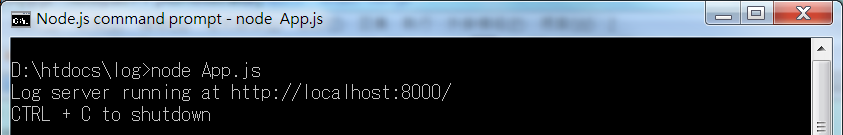


Step 2: Change directory to where the Advantech Private Serve Sample code is located. For example: D:\htdocs\log



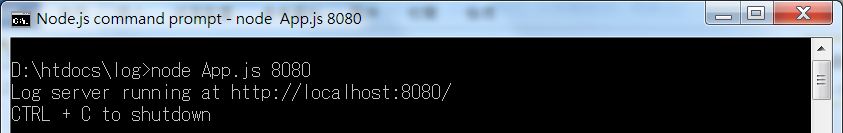
Step 3: Execute sample Private Server with the following command:

node App.js



You can also specify other port number for Private Server. For example, you can use port number 8080 with following command:

node App.js 8080



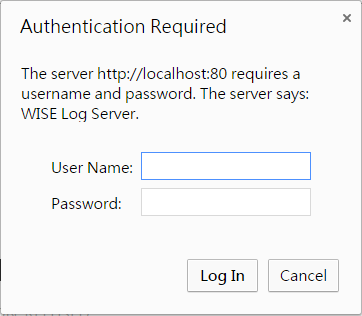
Step 4: Please use web browser to connect to private server with following URL(for Port: 8000):

http://localhost:8000

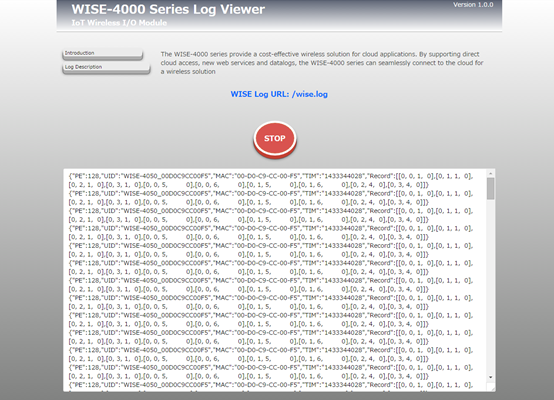
Web browser will prompt a dialog for entering user account and password. System default value is:

User Name: root

Password: 00000000

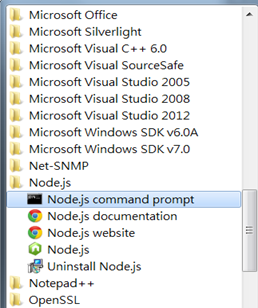


Step 5: After login, you could see WISE-4000 series logs(includes IO data and System Event) in Web Browser if logs are received successfully.



## For Private Server using Https protocol

Step 1: Execute Node.js command prompt from Windows “Start Menu”.

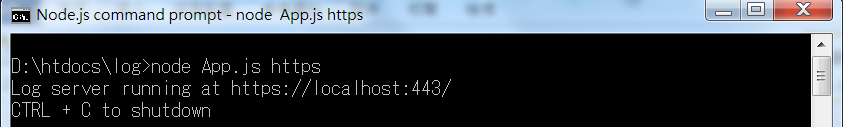


Step 2: Change directory to where the Advantech Private Serve Sample code is located. For example: D:\htdocs\log



Step 3: Execute sample Private Server with the following command:

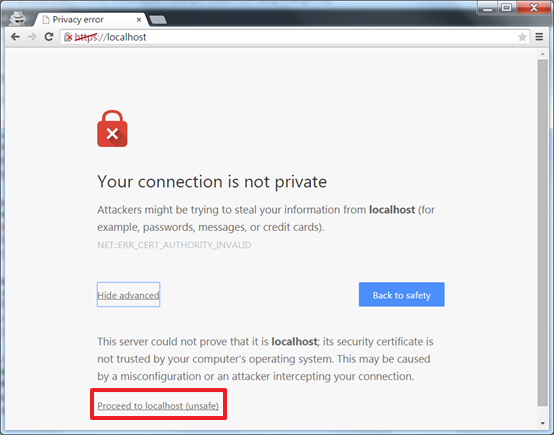
node App.js https



Step 4: Please use web browser to connect to private server with following URL:

https://localhost

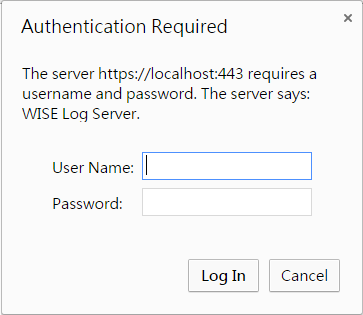
It is normal for web browser to display a warning message since the certification file we just created is not authorized by CA (Certification Authority). Please ignore it and proceed to view web page.



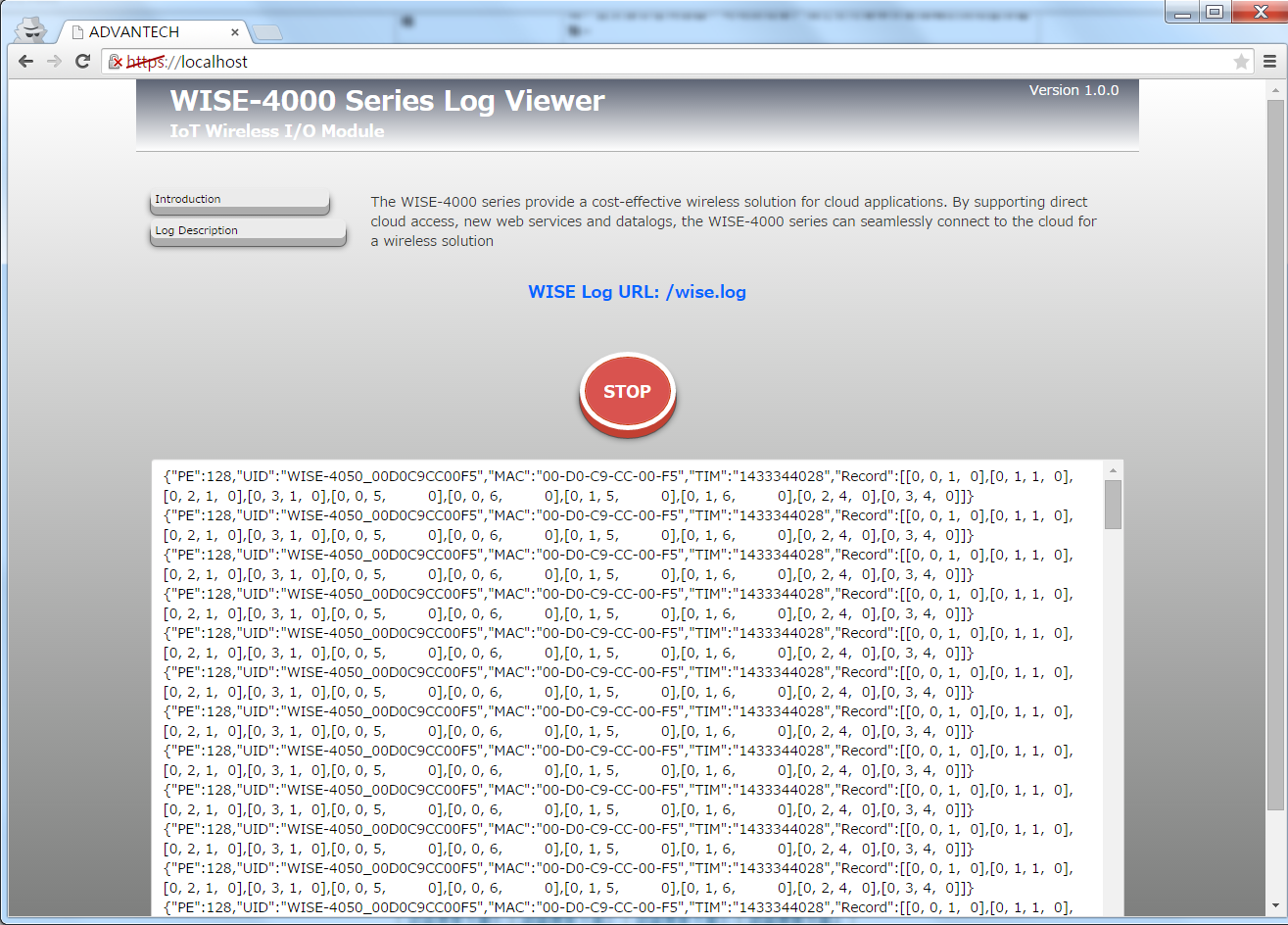
Step 5: Web browser will prompt a dialog for entering user account and password. System default value is:

User Name: root

Password: 00000000



Step 6: After login, you could see WISE-4000 series logs(includes IO data and System Event) in Web Browser if logs are received successfully.

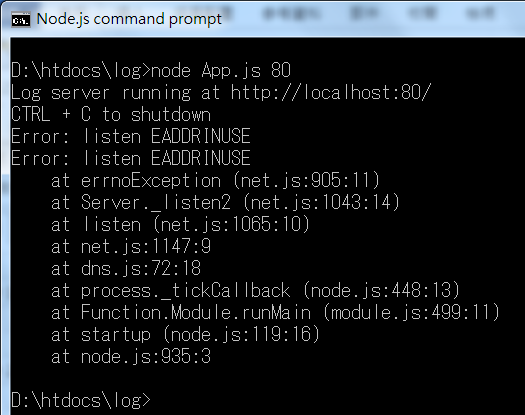


**Chapter** **4**

# Troubleshooting

## Private Server Start-up error

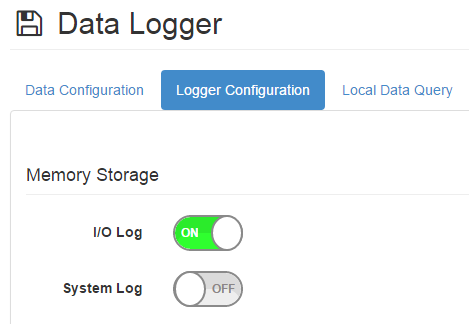
You may see below error message when start-up private server.

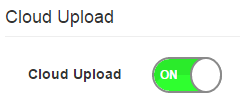


This error indicates TCP port 80 is used by other program on your computer. Please close any program that uses port 80 or choose another port number (e.g. 8080) for private server to listen.

## No log received in Private Server

Step 1: If you want to receive upload csv file, please make sure IO log or System Log in WISE is turned on in Memory Storage of Data Logger configuration. Then turn on Cloud Upload in Data Logger configuration.





Step 2: If you want to receive Push Notification of IO Log or System Log, please make sure the corresponding items are turned on in Data Logger configuration.

