doremi

Technology Leadership
for Digital Cinema

CaptiLink

User Manual

Version 1.0

Software License Agreement

The software license agreement can be found at the following location:
http://www.doremilabs.com/support/cinema-support/cinema-warranties/

Hardware Warranty

The hardware warranty can be found at the following location:
http://www.doremilabs.com/support/cinema-support/cinema-warranties/

Table of Contents

1   Introduction

1.1   Purpose

This manual explains how to set up the Doremi CaptiLink device.

1.2   Requirements

- Computer
- Ethernet Cable
- USB Flash Drive (optional)
- Female-to-Female, pin-to-pin, serial cable (optional)
- Power Supply (included)

1.3   Contact

If in need of help or assistance, please contact your nearest Doremi Labs Technical Support at:

USA
- 24/7 Technical Support Line: +1-866-484-4004
- Technical Support Email: support@doremicinema.com

Europe
- 24/7 Technical Support Line: +33 (0) 492-952-847
- Technical Support Link: http://support.doremitechno.org/ticketing

Japan
- Technical Support Line: +044-966-4855
- Technical Support Email: support@doremilabs.co.jp

Australia ~ China ~ India ~ Indonesia ~ Korea ~ Malaysia ~ New Zealand ~ Philippines ~ Singapore ~ Taiwan ~ Thailand
- Technical Support Email: supportasia@doremilabs.com

2   Overview

The CaptiLink device is an option for customers who do not have a Doremi Digital Cinema Server, but still want to use the CaptiView device. There are three ways to set up the CaptiLink's network. The USB method is the primary way to set up the network of the device. Second is the Ethernet Port, and the third method is to use the Serial Port. Logging in using SSH or serial connection is required to complete the set up of the device.

2.1   Items to Configure

All the items mentioned below must be configured for CaptiLink to work properly:

- Network configuration:
  - IP address
  - Netmask
  - Gateway

- Auditorium number: Each auditorium in the theater must have its own auditorium number assigned to the CaptiView Transmitter.

- Server's IP address: The IP address of the server that is going to be used with the CaptiLink must be added to the CaptiLink's configuration.

Figure 1: CaptiLink

Figure 2: CaptiLink – Ethernet Port

Figure 3: CaptiLink – Serial Port/USB Connector

3   Configuration

Use the steps below to fully configure the CaptiLink device.

3.1   Network Configuration

3.1.1 Network Configuration via USB

This method should be used to "rescue" the device in case the IP address is lost.
Note: The steps in this section can *only* be performed on software versions 1.0.10 and higher.

To update the network configuration with a USB flash drive:

1) Create a directory called "doremi" at the root of the USB key.

2) Create a directory called "update" inside the /doremi directory.

3) Create a directory called "network" inside the /doremi/update directory.

4) Create a file and name it "ifconfig" with the following format. Replace items in bold with your desired settings.
   ```
   interface: eth0
   ip: 42.0.0.1
   mask: 255.255.255.248
   gateway: 42.0.0.6
   ```

5) Create a file and name it "ntp" (optional) with the following format. Replace items in bold with your desired settings.
   ```
   NTPSERVERS="server1.ntp.org server2.ntp.org"
   ```

6) Create a file and name it "dns" (required for NTP) with the following format. Replace items in bold with your desired settings.
   ```
   nameserver 172.17.16.1
   nameserver 8.8.8.8
   search rnd.doremilabs.fr
   domain rnd.doremilabs.fr
   ```

Warning: When creating these configuration files, make sure that the files do not have any extensions (e.g., .txt, .doc, etc.), which are the default for some operating systems.

7) Place all three files that were created into /doremi/update/network/.

8) On the CaptiLink, remove the CaptiView Transmitter and plug in your USB key, and wait for one minute. Then reboot the box with the USB plugged in. Wait 2 minutes without any USB activity (watch your USB key LED to know), and then remove the USB. Replace the USB flash drive with the CaptiView Transmitter, and reboot the device.

Note: The files on USB flash drives are never moved or changed by the product.

3.1.2 Configuring the Network via CLI

Note: This method is valid for all CaptiLink software versions. For more information on logging into the Command Line Interface (CLI), see Section 4.

3.1.2.1   IP Configuration

- To configure the IP of the CaptiLink, type the following command (xxx.xxx.xxx.xxx = the desired IP address):

```
echo -n xxx.xxx.xxx.xxx > /doremi/etc/ip_addr  <Enter>
```

- To configure the netmask, type the following command:

```
echo -n xxx.xxx.xxx.xxx > /doremi/etc/netmask <Enter>
```

- To configure the gateway, type the following command:

```
echo -n xxx.xxx.xxx.xxx > /doremi/etc/gateway <Enter>
```

3.1.2.2   NTP Servers (Optional)

- To add a new line to your NTP setup, type the following command while replacing the bold item with your desired NTP settings:

```
echo NTPSERVERS="server_1" >> /doremi/etc/ntpservers   <Enter>
```

3.1.2.3   DNS (Required for NTP)

- To add a new line to your DNS, type the following command:

```
echo "nameserver 172.17.16.1" >> /doremi/etc/resolv.conf   <Enter>
```

3.2   *Configuring the Transmitter's Auditorium Number*

Note: This is the only method valid for all CaptiLink software versions. For more information on logging into the Command Line Interface (CLI), see Section 4.

- To change the auditorium of the CaptiView Transmitter, replace the bold item with a number that is in the range of 1-32. Make sure that no two transmitters are configured with the same auditorium number:

```
echo -n aud_number > /doremi/etc/s430-10/audi.conf  <Enter>
```

- Reboot for the changes to take effect.

3.3   Adding the IP of the Digital Cinema Server to the CaptiLink

Note: This is the only method valid for all CaptiLink software versions. For more information on logging into the Command Line Interface (CLI), see Section 4.

- To add the IP address, type the following command:

```
echo -n xxx.xxx.xxx.xxx > /doremi/etc/s430-10/ip.conf  <Enter>
```

- Reboot the CaptiLink for the changes to take effect.

4   Annex A: Logging into CaptiLink

4.1   Logging into CaptiLink via SSH

- The default IP address of the CaptiLink is 192.168.9.10.
- Set your computer's IP address in the range '192.168.9.*xx*', *xx* being in the range (2-254 except 10 when using default IP).
- Connect the CaptiLink with an Ethernet cable to the newly configured port and power ON.
- Download and install the program "PuTTY" (or any ssh client) on the computer you just assigned the new IP address to.
- Connect to the default IP 192.168.9.10 on port 22 using the ssh client.

Note: If the IP address was changed using the USB method, use the IP address that was assigned to the CaptiLink instead of the default IP.

- When the unit is done booting up, log in as "root."
  - Password for "root:" "veeone."
  - It is recommended to change the "root" password by typing the following command and following the on-screen instructions: "passwd"

4.2   Logging into CaptiLink via Serial Port

- The serial cable required for a proper connection is a female-to-female, pin-to-pin cable, which is provided in the package.
  - Serial connection settings are:
    - Speed 115200
    - Data bits: 8
    - Stop bits: 1
    - Parity: None
    - Flow control: None
  - Connect and switch the device on and wait for it to boot.
- When the unit is done booting up, log in as "root."
  - Password for "root" is "veeone"

It is recommended to change the root password by doing the command and following the on-screen instructions: "passwd"

5   Annex B: Upgrading the CaptiLink Software

There are two ways to upgrade the software on the CaptiLink. One way is to use an FTP client (e.g., Core FTP or Filezilla), and the other is to use a USB flash drive to perform the upgrade.

5.1   FTP Client

- Make sure that an FTP client is installed on the computer.
- Turn the CaptiLink ON and make sure it is able to ping to the network.
- Open the FTP client and connect using the IP of the CaptiLink under port 21 and login as the "root" user and enter the appropriate password.
- Add the update package (".pkg file") to the folder "**/doremi/etc/rc.once**" and then reboot.
- To check if the upgrade was successful open an SSH session and type the following command: **'more /doremi/etc/version'** and make sure that the version matches that of the ".pkg" file.

5.2   USB Flash Update

1) Create a directory name it "doremi" in the root of the USB flash drive.
2) Inside the "doremi" directory, create another folder and name it "update" (e.g., '/doremi/update/').
3) Copy the ".pkg" file to the path of the USB flash drive '/doremi/update/' then safely unmount the USB flash drive.
4) Put the USB flash drive in place of the CaptiView Transmitter. Wait for the light to stop blinking and then do a reboot (or power cycle).
5) To check if the upgrade was successful, open an SSH session and type the following command.The version should match that of the ".pkg" file:

```
more /doremi/etc/version
```

6   Generating a Report

To troubleshoot the product, all product information and logs are conveniently collected and stored in a file that can be sent to Doremi Technical Support for review.

6.1   Generating a Report via CLI

To generate the report via CLI, the operator has to log into the CaptiLink (see Section 4) with root access and execute the following command:

```
/doremi/sbin/report.sh <Enter>
```

The resulting file will be generated under /tmp directory and the operator can use an FTP client to get it.

6.2   Generating a Report via USB

To generate a report using a USB key:

1) Create a directory called "doremi" at the root of the USB key. This may have been previously created.
2) Create a directory called "report" inside the /doremi directory.
3) On the product, remove the CaptiView Transmitter and plug in your USB key, then reboot the box.
4) Wait 2 minutes without any USB activity (watch your USB key LED to know). After this, you you can remove the USB, replace the dongle, and reboot the box.

The report will have been generated in the USB key folder /doremi/report.

7   Technical Specifications

The following lists the CaptiLink Ethernet connection specifications:

- Integrates with any external Gigabit Ethernet switch.
- Gigabit Ethernet (GbE or 1 GigE) supports 1000BASE-T (also known as IEEE 802.3ab).
- Each 1000BASE-T network segment can be a maximum length of 100 meters (328 feet), and must use Category 5 cable or better.

8 Acronyms

Term	Definition
CLI	Command Line Interface
DCP	Digital Cinema Package
USB	Universal Serial Bus
UUID	Universally Unique Identifier

9 Document Revision History

Date	Version	Description
08/30/2012	1.0	First version.