



UC-8112-LX-STK Software Quick Installation Guide

First Edition, May 2015

Introduction

This guide describes how to use Webmin to control the UC-8112-LX computer remotely. You may also use Webmin for system evaluation and data acquisition.

Preparing a Bootable SD Card

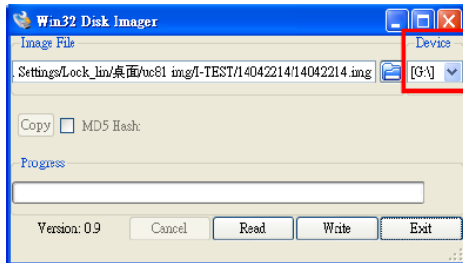
We strongly suggest that you prepare a bootable SD card to ensure that you have the latest kernel on your UC-8112 computer. You can download the latest UC-8112-LX-STK software image from Moxa's website.

On a Windows Platform

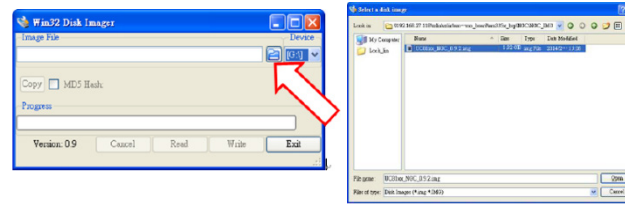
1. Make sure the write protect switch on the SD card is unlocked.



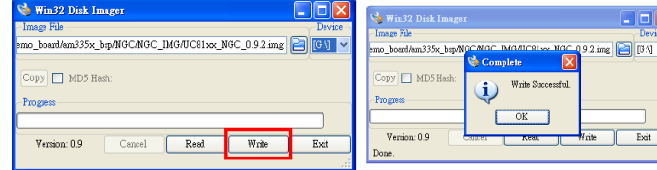
2. Insert the SD card into a Windows PC.
3. Download win32diskimager from the following link: <http://sourceforge.net/projects/win32diskimager/>
4. Execute **win32diskimager** after the installation.
5. Make sure the device name matches the USB device.



6. Select the image file.



7. After selecting the correct image file, click the **Write** button.
8. When finished, click **OK**.



On a Linux Platform

1. Make sure the write protect switch on the SD card is unlocked.
2. Insert the SD card into the Linux PC.
3. Use the **dmesg** command to identify the device node.

```
sd 25:0:0:0: Direct-Access TS-RDFS SD Transcend T535 PQ: 0 ANSI: 6
sd 25:0:0:0: Attached scsi generic sg3 type 0
sd 25:0:0:0: [sd] 31260672 512-byte logical blocks: (16.0 GB/14.9 GiB)
sd 25:0:0:0: [sd] Write Protect is off
sd 25:0:0:0: [sd] Node Sense: 23 00 00 00
sd 25:0:0:0: [sd] Write cache: disabled, read cache: enabled, doesn't support DPO or FUA
sd: unknown partition table
sd 25:0:0:0: [sd] Attached SCSI removable disk
```

4. Use the **dd** command to configure the UC-8112-LX image on the SD card.

```
root@Lock-Lin:/home/work# sudo dd if=/140
42420.img of=/dev/sdd
bs=512k
1954+0 records in
1954+0 records out
1024458752 bytes (1.0 GB) copied, 119.572 s, 8.6 MB/s
```

Connecting to the UC-8100 Computer

Use an Ethernet cable to connect to the LAN1 port on your UC-8112's computer. Open a browser on your computer and connect to the following address:

https://192.168.3.127:10000

After connecting to the UC-8100, the following figure should appear:

Logout successful. Use the form below to login again.

Login to Webmin

You must enter a username and password to login to the Webmin server on 192.168.31.96.

Username

Password

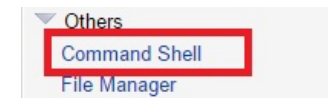
Remember login permanently?

Provide the following information for Username and Password:

Username: **root**

Password: **root**

The main menu items will be displayed on the left, and the main information of the UC-8100 will be shown in the middle. Next, determine the location of the **Command Shell** from the **Others** drop-down list.



Click **Command Shell** and enter the commands in the field.



Configuring the Cellular Module

To enable and dial up the cellular module, type the following command in the Command Shell:

cell_mgmt start

To disable and disconnect the cellular module, type the following command in the Command Shell:

cell_mgmt stop

To power off the cellular module, type the following command:

cell_mgmt power_off

To power on the cellular module, type the following command:

cell_mgmt power_on

To enable the routing function of the cellular module, type the following command:

lte_router

Note that once the routing function has been enabled, the device connecting to the LAN 2 port of the UC-8100 computer can connect to the network via the cellular module. Remember to enable the device's DHCP function.

Configuring IPSec Settings

To set up the IP address of the IPSec server, edit the following file: **/etc/ipsec-tools.conf**

```
## Flush the SAD and SPD
#
flush;
spdflush;
## Some sample SPDs for use racoon
#
spdadd 10.10.10.78 10.10.10.10 any -P out ipsec
esp/transport//require;
#
spdadd 10.10.10.10 10.10.10.78 any -P in ipsec
esp/transport//require;
```

Note that **10.10.10.10** is the IP address of the remote host.

To configure the setup key, edit the following file:
/etc/racoon/racoon.conf

```
log notify;
path pre_shared_key "/etc/racoon/psk.txt";
path certificate "/etc/racoon/certs";
remote anonymous {
    exchange_mode main,aggressive;
    proposal {
        encryption_algorithm aes_256;
        hash_algorithm sha256;
        authentication_method
pre_shared_key;
        dh_group modp1024;
    }
    generate_policy off;
}
sainfo anonymous{
    pfs_group 2;
    encryption_algorithm aes_256;
    authentication_algorithm hmac_sha256;
    compression_algorithm deflate;
}
```

To configure the pre-shared key, edit the following file:
/etc/racoon/psk.txt.

```
- 10.10.10.10 1234567890
- /etc/init.d/setkey restart
/etc/init.d/racoon restart
```

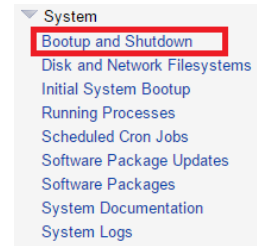
Note: Authentication Mode
- Pre-shared key
- X.509

In this example, **10.10.10.10** is the IP address of the host, while **1234567890** is the pre-shared key.

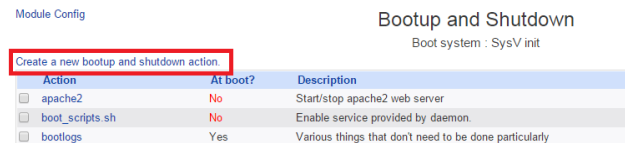
To start the IPSec configuration, run the following commands:
/etc/init.d/setkey restart
/etc/init.d/racoon restart

To enable the IPsec function when the system starts, take the following steps:

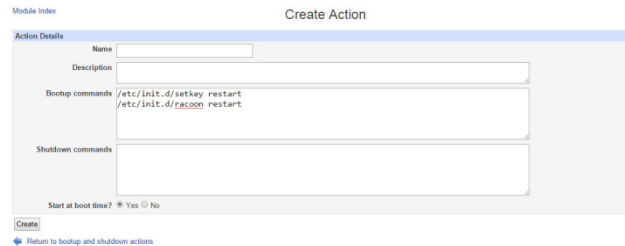
1. Select the **Bootup and Shutdown** option in Webmin.



2. Click **Create a new bootup and shutdown action.**



Enter the following commands in the Bootup commands field.
/etc/init.d/setkey restart
/etc/init.d/racoon restart



When finished, click **Create**.

Data Acquisition

This Start Kit comes with an ioLogik E1242 RTU controller. To acquire the data from the controller, use the following commands in the Command Shell field:

To read the value from Digital Input 0:
Em2240 -d 192.168.31.66 -i 0

To read the value from Analog Input 0:
Em2240 -d 192.168.31.66 -i 1

To set Digital Input to high level:
Em2240 -d 192.168.31.66 -o 1 -s 1

Configuring DHCP Server Settings

To configure the DHCP server, take the following steps.

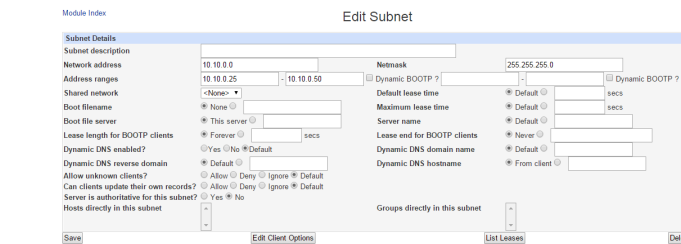
1. Select the **DHCP Server** option in Webmin.



2. A default DHCP server is shown. Click the DHCP server icon.



3. You can configure the DHCP server settings on this page. When finished, click **Save**.



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