4ipnet
for your IP network

# User Guide

## Network Ticket Generator (SDS100 and POS Printer)

V1.00

# Copyright Notice

# 1. Introduction

## Overview of Network Ticket Generator

Whether you are "*operating a wireless hotspot service for generating revenue"* or "*providing free but controlled wireless internet access to guests"*, it would be handy to both the operators and the wireless users if the account information (such as username, password, SSID and etc.) can be readily output to POS printers and printed out as account tickets.

SDS100 is designed specifically to operate in conjunction with all 4ipnet Controllers/Gateways, including both WHG and HSG series. Typical serial POS printers on the market today may or may not be IP network ready, and it is not practical to integrate each brand one-by-one with 4ipnet Controllers/Gateways. Hence, 4ipnet has specifically designed a smart device server -- SDS100, for two purposes:

1. Attaching before a serial POS printer so that one or more POS printers can be connected to a Controller/Gateway via IP networks.
2. Pre-integrated with 4ipnet Controller/Gateway so that account generation becomes quick and easy to the operator, simply by a push of buttons on the device.

4ipnet provides **SDS100** and a POS printer as a combo set called **Network Ticket Generator**.

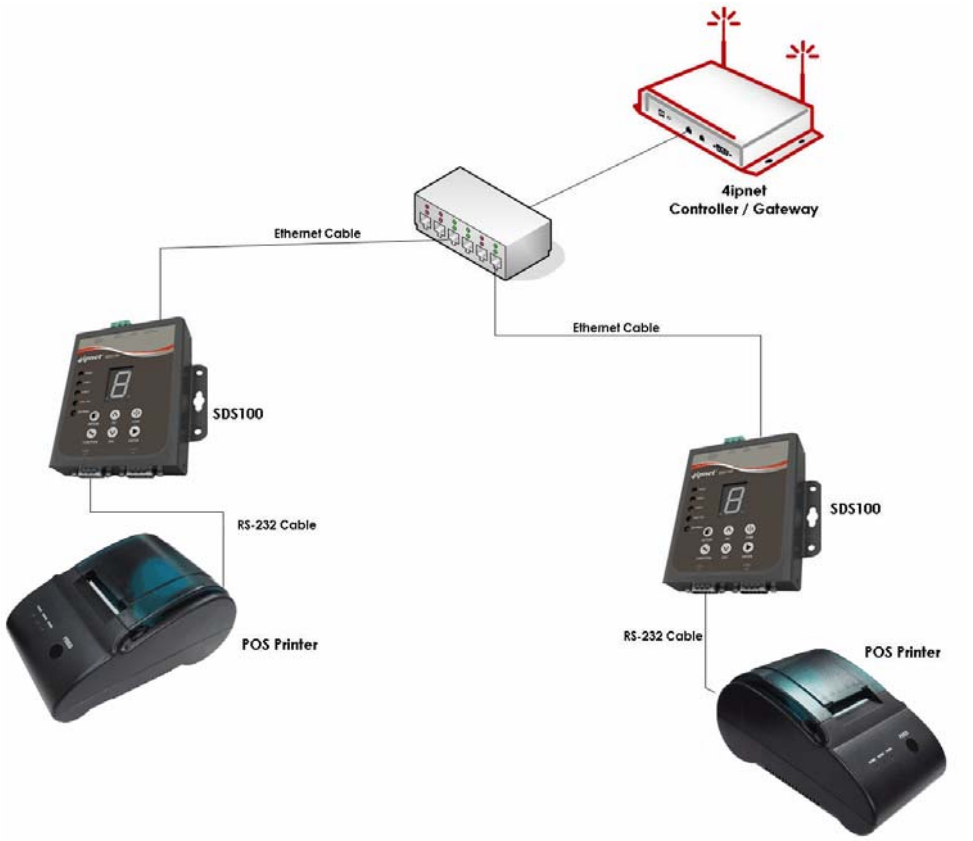
The followings are typical application scenarios:

- A small business who wishes to quickly set up a wireless service hotspot for charged internet service may purchase a HSG200 Gateway, and a Network Ticket Generators set. HGS200 Gateway alone serves as an AP and a gateway, Network Ticket Generator enables the registration operator to generate and issue acounts via push buttons on the SDS100 and hand out the account ticket printed out by POS printer.
- A corporate has several sites. Deployed at the reception area of each site are HSG200 with a SDS100 and a POS printer. Guests who need wireless connection to the internet simply need to request the receptionist and obtain a slip with account information. The guest account will automatically expire after the pre-configured time.
- A hotel has a 4ipnet Controller/Gateway and multiple APs within it's hospitality areas. Multiple sets of Network Ticket Generator are distributed at the service desks and lounge counters. The service clerks are able to create accounts for their guests with charged or free internet service depending on the hotel's service model.

Below are two network diagrams examples using Network Ticket Generator combo set.

(1) One HSG Gateway with one Network Ticket Generator set


(2) One HSG Gateway with multiple Network Ticket-Generator sets



**Note:**

The POS printer has an individual manual, therefore, its configuration details is not covered in this guide.

Though SDS100 is specifically designed to for on-demand account generation and operate POS printers, it can also be deployed independently to connect other RS232 devices to an Ethernet network for remote operation. If you will be deploying SDS100 independently to manage other serial devices, please carefully set the ***Serial Settings*** in SDS100 to match the operating needs of your serial device.

**Note:**

If you connect other serial device to SDS100 and are unable to remotely operate your connected serial device, please check that:

- The settings under ***Serial Settings*** of SDS100 are configured to match your serial device operating requirements.
- If your serial device application operates on pure serial communication then you need to setup a COM port redirector.



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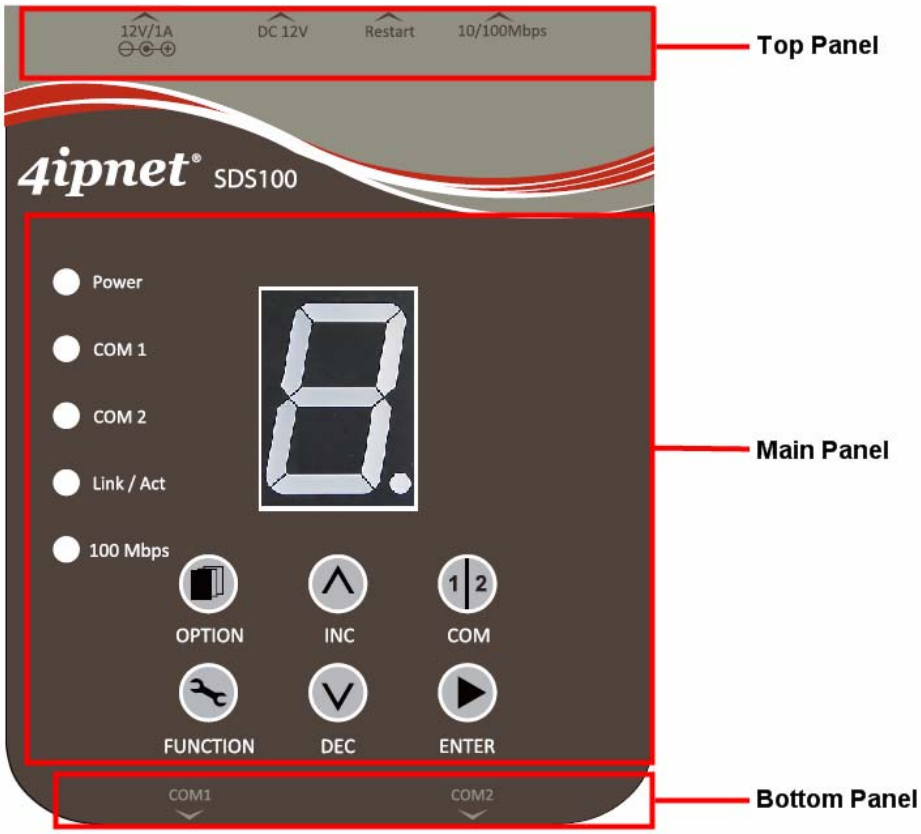
# 2. Device Overview

## Panel Overview




### Top Panel

| | |
|---|---|
| Adapter Socket (12V/1A) | The power socket for connecting to an external power source through the power adapter provided in the package. |
| DC Socket (DC12V) | The power socket for connecting to an external power source through a DC power supply. |
| Restart Button | Press to restart SDS100. |
| Ethernet Port | Ethernet port for connecting to a 4ipnet Controller/Gateway. |

## Bottom Panel

| | |
|---|---|
| COM 1 | Serial Port for connection with a POS printer. |
| COM 2 | Serial Port for connection with a POS printer. Used for back up when COM 1 malfunctions. |

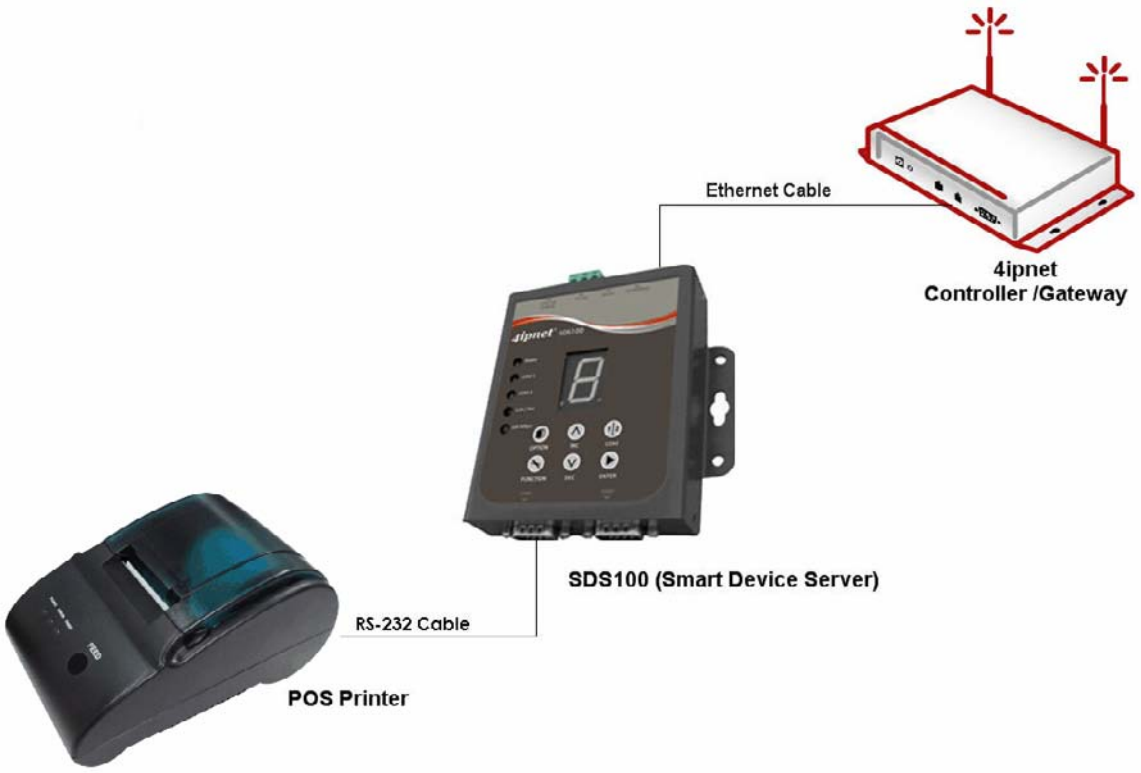
## Main Panel

| **LED indicators** | |
|---|---|
| Power | Turned on when properly connect to power supply. |
| COM 1 | Turned on when output is switched to COM1.<br>*Note:*<br>▪ *When COM 1 and COM 2 are blinking simultaneously, this means that Terminal Server configuration is not set correctly. Please check the settings in Terminal Server of your 4ipnet Gateway/Controller.*<br>▪ *When COM 1 and COM 2 are turned on simultaneously, this means that the system is in safe mode.* |
| COM 2 | Turned on when output is switched to COM2.<br>*Note:*<br>▪ *When COM 1 and COM 2 are blinking simultaneously, this means that Terminal Server configuration is not set correctly. Please check the settings in Terminal Server of your 4ipnet Gateway/Controller.*<br>▪ *When COM 1 and COM 2 are turned on simultaneously, this means that the system is in safe mode.* |
| Link / Act | Turned on when LAN port is connected to an upstream networking device such as a switch or Gateway/Controller. |
| 100 Mbps | Turned on when LAN port is connected. |

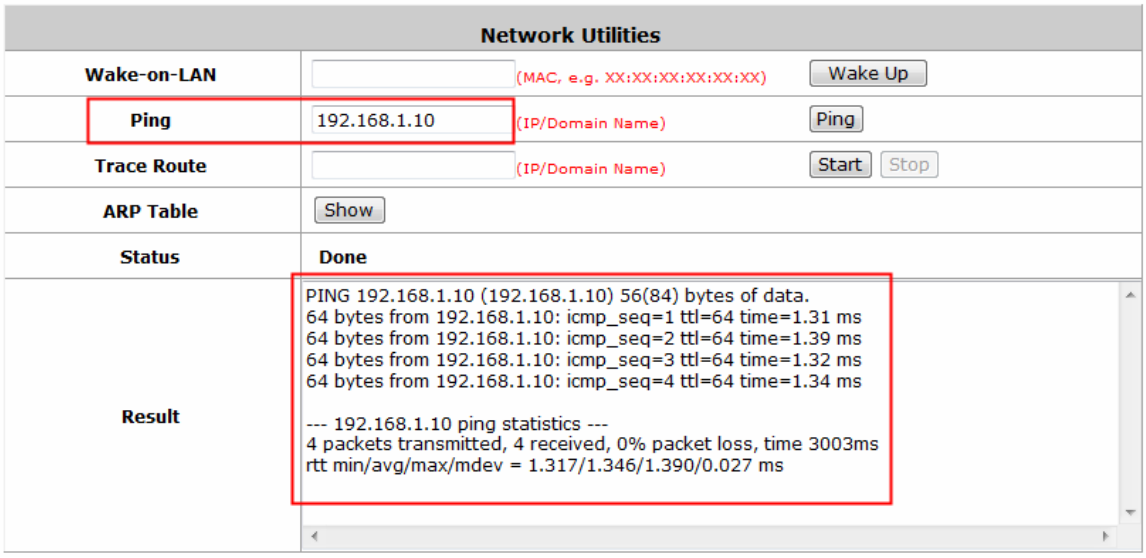
| | |
|---|---|
| 7 Segment | Displays an integer between 0 ~ 9 which indicates the billing plan number selected. |
| **Buttons** | |
|  | For future use. |
|  | Increase the numeric display for selecting a billing plan number. |
|  | For switching the output to COM1 or COM2. |
|  | Press this button followed by selecting a number and press Enter will perform a specific action. The available combinations are as follows:<br>FUNTION + 1 + ENTER: Print out the IP address of SDS100.<br>FUNTION + 8 + ENTER: Enter panel test mode.<br>FUNTION + 9 + ENTER: Reset SDS100 to factory default.<br>FUNTION + 0 + ENTER: Lock the panel of SDS100. To Unlock select your lock number and press ENTER |
|  | Decrease the numeric display for selecting a billing plan number. |
|  | Create and print out an account for the chosen billing plan. |

# 3. Hardware Setup

The following diagram illustrates how to connect SDS100 to the POS printer and 4ipnet Gateways/Controllers. Please follow the steps described below to install hardware:




1. Attach SDS100 to a power source, either through adaptors provided in the package or through DC socket with a DC power supply.
2. Attach POS printer to a power source, through adaptors provided in the package and turn on the power switch situated on the left side of the device.
3. Connect POS printer to the COM1 port of SDS100 by a RS-232 cable provided within POS printer package.
4. Connect SDS100 to the LAN port of your 4ipnet Gateway/Controller by an Ethernet cable. Note: You need to connect to the correct LAN port if your Gateway/Controller is operating in Port-based mode.
5. To verify that the system is up and running, enter the WMI of your Gateway/Controller and ping SDS100 (**192.168.1.10**). You should see replies from SDS100 as shown below, this means that the devices are setup and working properly.




**Note:** If you are unable to get a reply from pinging SDS100, please refer to ***System Configuration*** and check that the network settings of SDS100 and Gateway/Controller interface connected to are under the same subnet.

# 4. System Configuration

SDS100 is designed specifically to operate in conjunction with all 4ipnet Gateways/Controllers, including both HSG and WHG series. If you are not using default settings, before connecting SDS100 to your Gateway/Controller, some configurations steps are required. The configuration instructions for 4ipnet Gateways/Controllers and SDS100 are covered in the following sections.

## 4.1 SDS100

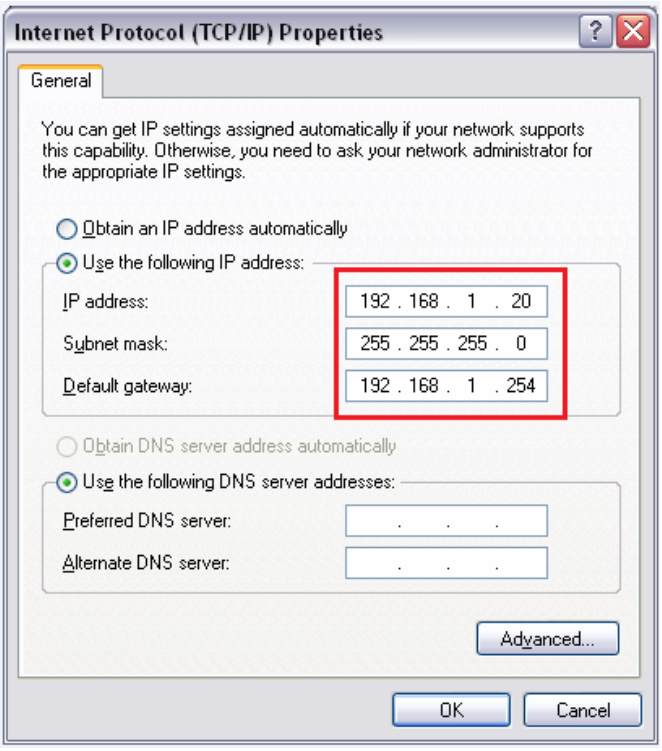
SDS100 supports web based configuration. By factory default, SDS100 web interface can be accessed with ***IP address: 192.168.1.10***

***Subnet Mask: 255.255.255.0***

***Default Gateway: 192.168.1.254***

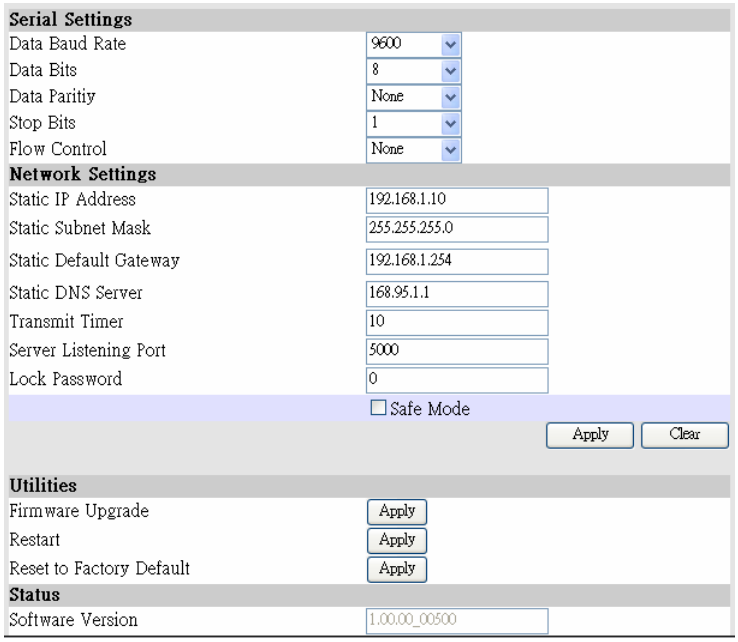
**Step1:**

Configure administrator PC's TCP/IP settings with a static IP address that is under the same subnet mask as SDS100. For example: 192.168.1.20



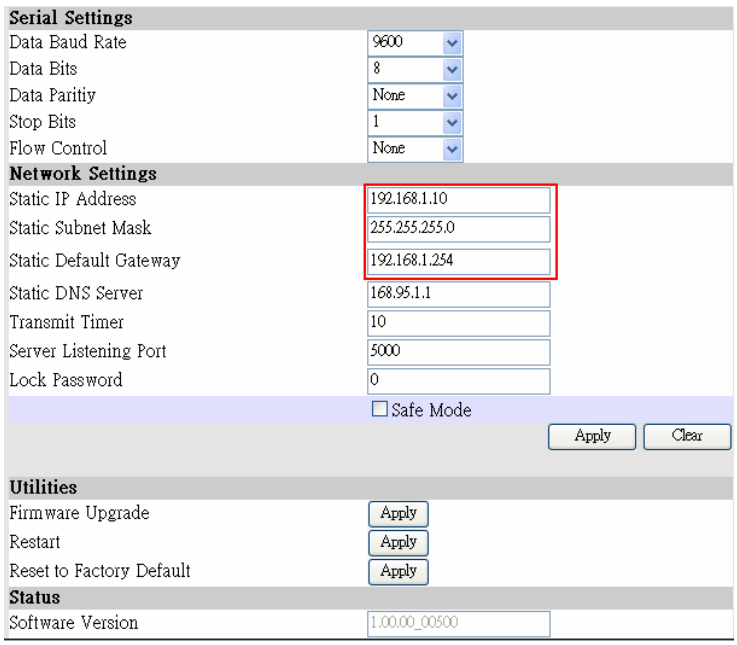
**Step2:**

Attach SDS100 to a power supply using the adapter provided in the package. Connect the administrator PC to the Ethernet Port of SDS100 via an Ethernet cable. Launch a web browser and type in the default IP address of SDS100 in the address field (**http://192.168.1.10**), the web interface of SDS100 should appear.




**Step3:**

Change SDS100 Network Settings if necessary so that the IP address of SDS100 is under the same subnet as the Gateway/Controller's interface, which SDS100 will be connected to. Click ***Apply*** to save the settings.



## 4.2 4ipnet Gateway/Controller

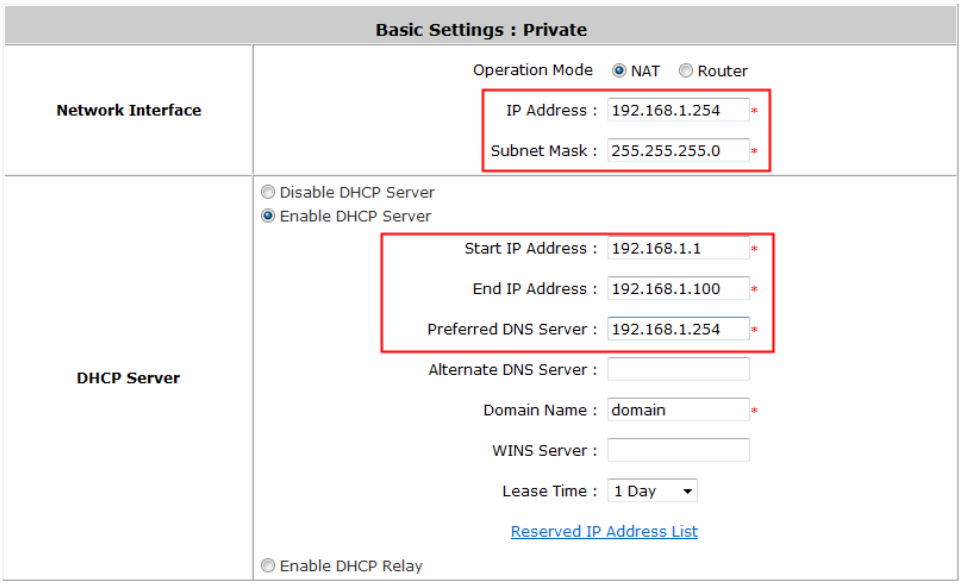
Configuration procedures are similar on all 4ipnet Gateway/Controller models, the following instruction steps uses HSG200 as illustration. Note: the screenshots may be slightly different for your Gateway/Controller model.

**Step1:**

Connect administrator PC to your Gateway/Controller and access the WMI (web management interface).


**Step2:**

Enter the configuration page of the Service Zone which SDS100 will be connected to. Check to make sure that the network settings of SDS100 are under the same subnet as this service zone.



**Step3:**

Go to the configuration page for On-demand authentication; click ***Configure*** to edit Terminal Server settings.

Enter the IP address (**192.168.1.10**) and Port (**5000**) of SDS100.

| | |
|---|---|
| **Ticket Customization** | Configure |
| **Billing Plans** | Configure |
| **External Payment Gateway** | Configure |
| **Terminal Server** | Configure |
| **On-demand Account Creation** | Create |

| Terminal Server Configuration | | | | |
|---|---|---|---|---|
| Item | Server IP | Port | Location | Remark |
| 1 | 192.168.1.10 | 5000 | | |

**Step4:**

Edit and enable desired billing plans.

| Billing Plans | | | | | |
|---|---|---|---|---|---|
| **Plan** | **Type** | **Quota** | **Price** | **Enable** | **Function** |
| 1 | Usage-time | 10 day(s) 2 hr(s) 3 min(s) | 34 | ☑ | Edit |
| 2 | Duration-time | From 2010/05/20 01:18:00 till 2010/06/25 07:15:00 | 45 | ☑ | Edit |
| 3 | Usage-time | 8 day(s) 9 hr(s) 30 min(s) | 5 | ☑ | Edit |
| 4 | N/A | | | ☐ | Edit |
| 5 | N/A | | | ☐ | Edit |
| 6 | N/A | | | ☐ | Edit |

# 5. Operation Instructions

After completing the Hardware Setup and the devices are physically connected, the system is ready for operation. This section will describe how to operate SDS100 to printout tickets for enabled billing plans.

1. Select an enabled billing plan number on SDS100 by 

or 

button. The numeric LED display on the center of the device represents the billing plan number currently selected.

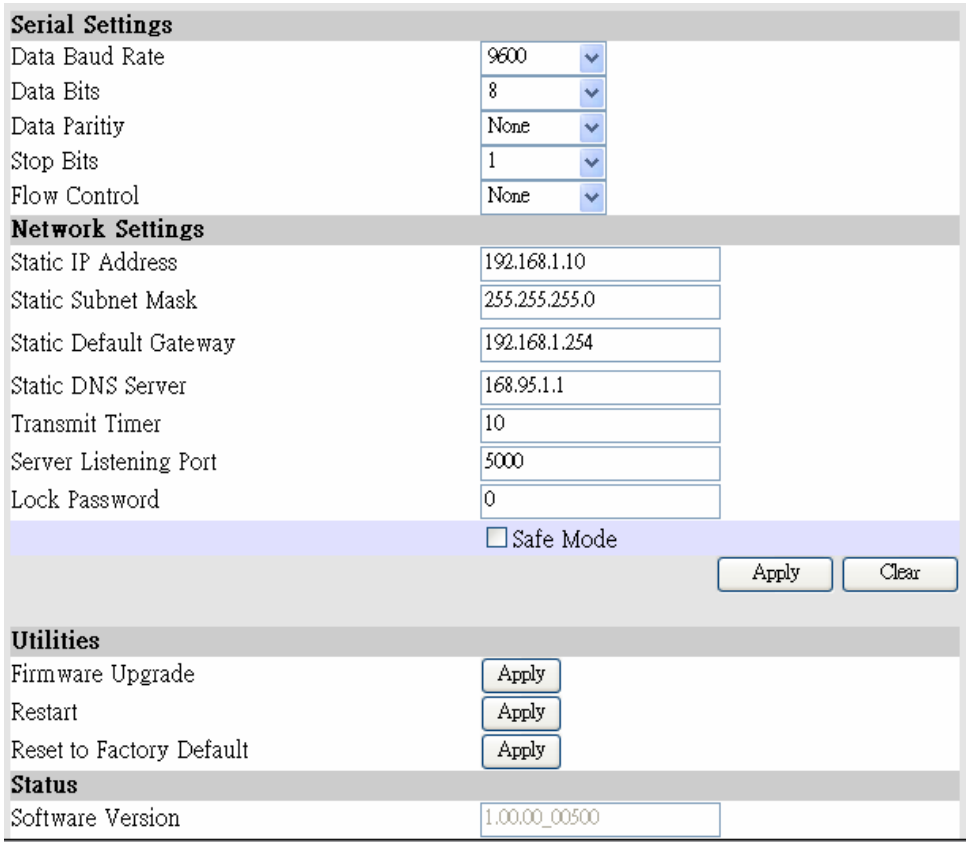
2. Press 

button on SDS100 to create and print out an on-demand account of the selected billing plan. POS PRINTER will print out the ticket with the text format (Without background image) configured on your Gateway/Controller in **Ticket Customization.**

**Note:** If you are unable to get a ticket printout after pressing ***ENTER***, please check if the selected plan is enabled.

# *Appendix A. SDS100 Web Interface Summary*

The attribute setting in this web interface is for COM 1 only. COM 2 uses default settings that are unchangeable.




| **Serial Settings (corresponding to POS printer)** | |
|---|---|
| Data Baud Rate | Select the desired baud rate. (The number of characters per second transferred) |
| Data Bits | Select the number of bits in each character. |
| Data Parity | Choose between Even or Odd for error detection, or select None for no error detection. |
| Stop Bits | Choose the number of stop bits to be sent at the end of every character. Electronic devices usually use 1 bit, slower electromechanical devices use 1.5 bit. |
| Flow Control | Choose the method of flow control to pause and resume the transmission of data to coordinate with printer speed. Select None if flow control is not required. |

| **Network Settings** | |
|---|---|
| Static IP Address | The static IP address assigned to SDS100. |
| Static Subnet Mask | The subnet mask of SDS100. |
| Static Default Gateway | The default gateway of SDS100. |
| Static DNS Server | Set the DNS server used by SDS100. |
| Transmit Timer | TCP transmit timer, set the desired value or use default value. When the timer expires for a sent packet, sender will retransmit the packet. |
| Server Listening Port | Set the port number for communication with the Gateway/Controller. |
| Lock Password | This attribute is the integer between 0 ~ 9 that will be set as the password for unlocking the main panel. |
| **Utilities** | |
| Firmware Upgrade | Firmware of SDS100 can be upgraded by clicking the ***Apply*** button. Note: Upgrade preparations are required before upgrade, please refer to ***Appendix B. Firmware Upgrade*** |
| Restart | Click ***Apply*** to restart SDS100 device. |
| Reset to Factory Default | Click ***Apply*** to reset SDS100 to factory default settings. |
| **Status** | |
| Software Version | The current software version running on SDS100. |

# *Appendix B. Firmware Upgrade*

Software tools tftpd32 is required in the upgrade procedure, please download and install tftpd32 before you proceed further.

**Note:**

Tftpd32 can be downloaded from the following link: http://tftpd32.jounin.net/tftpd32.html

For technical support please contact support@4ipnet.com

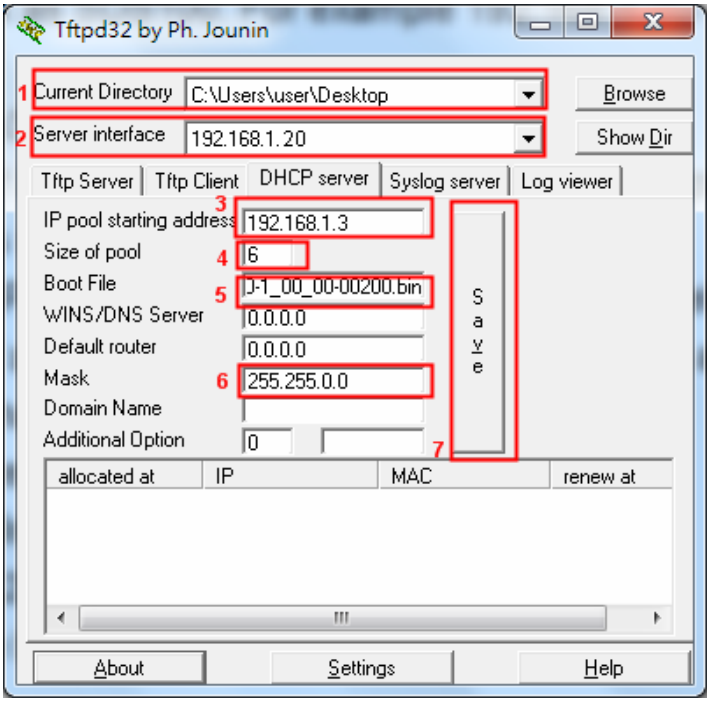
**Step1:** Place the new firmware of SDS100 on a local location (for example desktop) in the PC that is accessing SDS100's web interface and performing the upgrade.

**Step2:** Configure the TCP/IP settings of your PC with an IP address under the same subnet mask as SDS100. For example 192.168.1.20

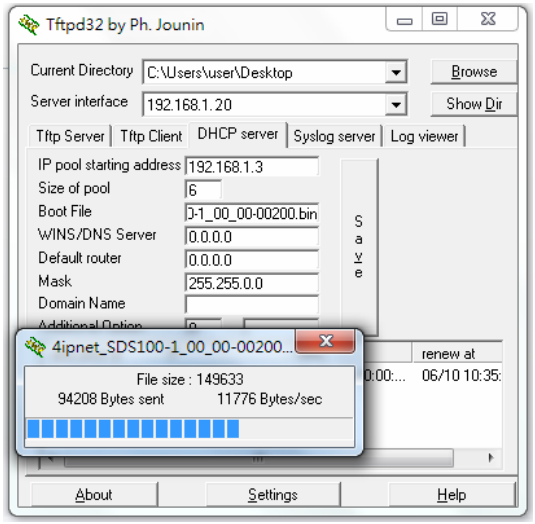
**Step3:** Launch tftpd32 and click the DHCP tab.

1. In *"Current Directory"* field, browse for the location path where the firmware is stored.
2. Enter the IP address of your PC in *"Server interfaces"* field.
3. In *"IP pool starting address"* field, enter the start IP address of an IP segment that is available for allocation.
4. Set the size of the IP pool.
5. Enter the firmware filename in *"Boot file field"*.
6. Enter 255.255.0.0 in the *"Mask"* field.
7. Click Save button.

**Note:** Please make sure that the location path and the firmware for upgrade is correct.




**Step4:** Click ***Apply*** of **Firmware Upgrade** in SDS100's web interface. SDS100 will automatically restart and connect to tftpd32 server set in Step3 as a DHCP client, download the firmware and perform the upgrade. Progress can be observed on tftpd32.




**Step5:** When complete, check the information displayed at **Software Version**, SDS100 have successfully upgraded to the new firmware.

P/N: V10020100525