LevelOne

FUS-3100

1-Port USB 2.0 MFP Server

User Manual

V1.0.0-0703

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Chapter 1 Introduction

Thank you for purchasing FUS-3100 1 Port USB 2.0 MFP Server (**in the following referred to as "Server"**). This Server is designed to connect your AIO/MFPs (All-In-One/Multifunction Peripheral), printers, and scanners, to your network, allowing all network users access to these shared USB devices resources.

1.1 About this Manual

This manual provides introductory information as well as detailed instructions on how to set up and manage FUS-3100 in various network environments.

To fully benefit from this document, you should be familiar with basic networking principles. The instructions described in this manual are based on the settings in a new Server. To reload the Factory Parameters, you can reset this Server back to Factory Default, which will restore most of the settings. For details, please refer to the chapter "Restore Factory Defaults".

1.2 Customer Support

Should you require any technical assistance, please contact your product reseller. Or you can visit our website at http://www.level1.com for latest product information.
This document is subject to changes without prior notice.

Chapter 2 Product Overview

2.1 Package Contents

Verify that nothing is missing from the package by using the checking list below. Please contact your dealer if anything is missing or damaged. All packing materials are recyclable. Please confirm the items in the package below:

● FUS-3100
● Power Adapter
● Quick Installation Guide
●.CD Manual/Utility

2.2 Product CD

This CD provides easy-to-use Control Center software, User Manual and Quick Installation Guide.

2.2.1 Start-up Procedures

If your computer is configured to auto start CDs, this CD will start automatically when inserted. You can also navigate to the CD and start the autorun.exe file from within the Windows file manager.

2.3 Physical Description

1. **Power Adaptor Connector:** DC IN 12V/1A adaptor
2. **Init Button**: to initialize this Server (factory default)
3. **Ethernet Connector:** RJ-45 connector
4. **USB Host Ports:** USB 1.1/2.0 compliant
5. **Indicators**
   - *Power Indicator* is lit while power is applied. If it is not lit, or if it blinks, there is a problem with this Server or power adapter.
   - *Link Status* is lit while network is applied. If it is not lit, it indicates that this server does not connect to the network.
   - *ACT Indicator* blinks to indicate network activity.
   - *USB Indicator* is lit while a USB device connects to USB Port of this Server. If it is not lit, or if it blinks, there is a problem with the USB device or this Server.

2.4 Configuration and Management

This Server can be configured and managed from its internal web pages or from the *Control Center*. These web pages or PC tools offer you a management tool suitable for all supported network environments.

2.5 Features and Benefits

This Server provides the following features and benefits:

1. ***Reliability:*** The Server provides high performance and reliability combined with low power consumption.

2. ***Easy to Install:*** The Server installs, operates, and is managed in a reliable and easy fashion.

3. ***Security:*** You can assign administrator name and password to restrict login.

4. ***Monitoring:*** The Server's web pages and user software allow you to continuously monitor the status of connected USB devices.

5. ***Future Proof:*** The firmware stored in the Server's Flash memory can be upgraded over the network. This allows you to quickly update and enhance its operational features when new Server software becomes available.

Chapter 3 Basic Installation

3.1 Connecting the Hardware

1. Connect the Server to the network with a twisted-pair cat.5 or cat.6 cable, 10baseT or 100baseTX.

2. Connect the Power Adapter to the Server. The power indicator will light up and USB indicators will flash. When the Link indicator lights up, the Server is correctly connected to the network.

3. Make sure that your USB device is switched off.

4. Connect the USB device to the USB port with the USB cable.

5. Turn on the USB device and make sure it is ready for use.

3.2 Assigning an IP Address to the Server

3.2.1 Preliminary

- If you have a DHCP server on your network, your Server will receive an IP address automatically. The IP address will then appear on the *Control Center*. If your DHCP server does not give an IP address to the Server, the Server will use the Factory IP address: 192.168.1.100.

- If you are not working in a DHCP network, you need to manually set the Server's IP address.

3.2.2 Ethernet Address

You do not need to know the Ethernet address of your Server for assigning an IP address to it. The Control Center can automatically search Servers and list their Ethernet addresses.

3.2.3 IP Address

Unless you are assigning an IP address using DHCP, you must obtain an unused IP address from your network administrator.

3.2.4 Methods for Setting the IP Address

You can set the IP address of your Server using one of the following methods, depending on your network operating environment:

- Automatic IP Address Assignment

- Manual IP Address Assignment

3.2.5 Host Names and Host Name Rules

The Host Name of the Server defaults to be "*FUS-3100*". If you put two or more Servers in your local area network, to avoid using the same Host Names you have to change the Host Names by

using the Control Center or the Server's web pages. If your Host Name is longer than 15 characters, the Server uses only the first 15 characters.

3.2.6 Setting the IP Address Using DHCP

Follow the instructions below to get an IP address using DHCP:

1. Edit or create a scope in the DHCP manager of the DHCP daemon. The entries included in this scope should contain the following parameters:
   - range of IP addresses
   - subnet mask
   - default router IP address
   - DNS server IP address
   - lease duration

2. Activate the scope. The Server automatically gets the DHCP parameters. If you are using DNS, you may include at least one DNS server IP address in the DHCP scope or manually set the DNS server IP address using Server's web pages or the Control Center.

3.2.7 Setting the IP Address Using the Control Center

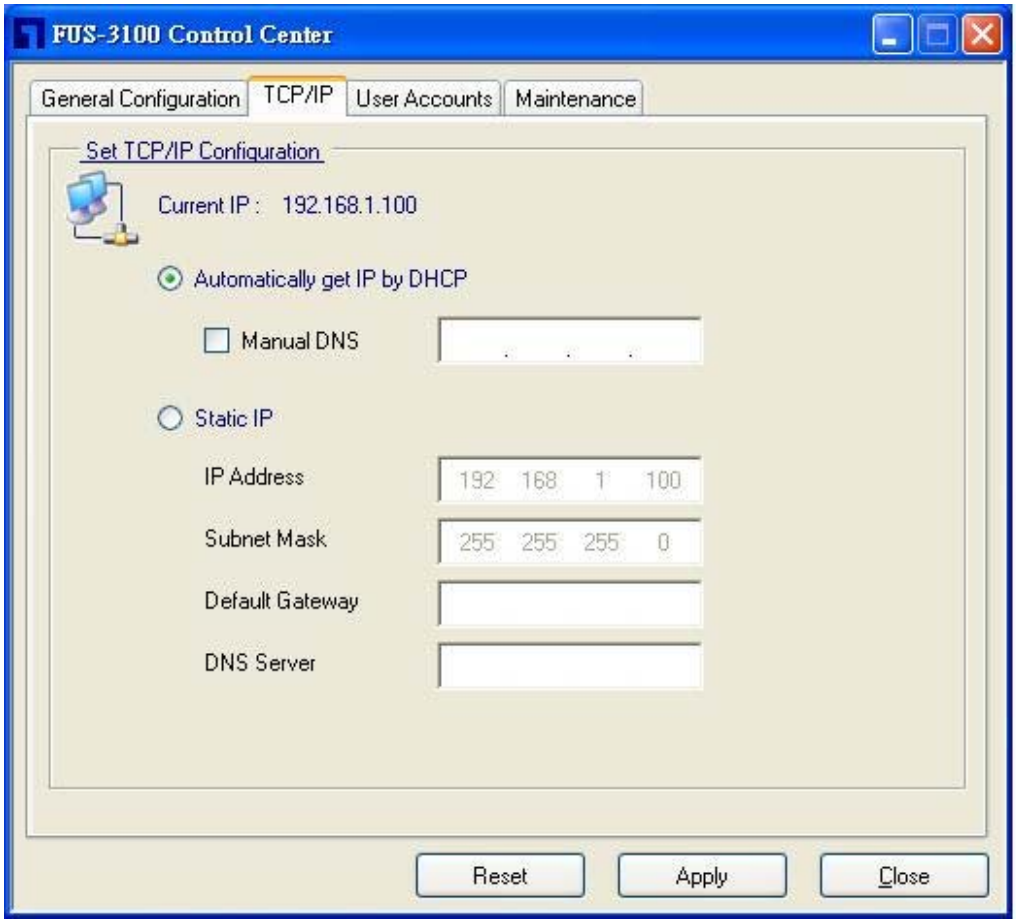
1. Install the Control Center. The Control Center is available on the Product CD.

2. Start the Control Center and Auto-searching Server window will appear.

3. If the tool finds multiple Servers in your local area network, then you have to select one Server from the Server List.

4. Double click the highlight list and enter the Server's administrator (default: *admin*) and password (default: *admin*).

5. After you have logged in successfully, select TCP/IP from the Server's menu. The Set IP Address dialog appears.



6. Click the button corresponding to your choice of IP setting method (static or dynamic using DHCP). When assigning a static IP address you also have to define Subnet Mask and Default Gateway. If you choose **Automatically get IP by DHCP**, you can use desired DNS by clicking the **Manual DNS** button and manually assigning a DNS.

7. Click **Apply** to save your settings. And the Server will reboot.

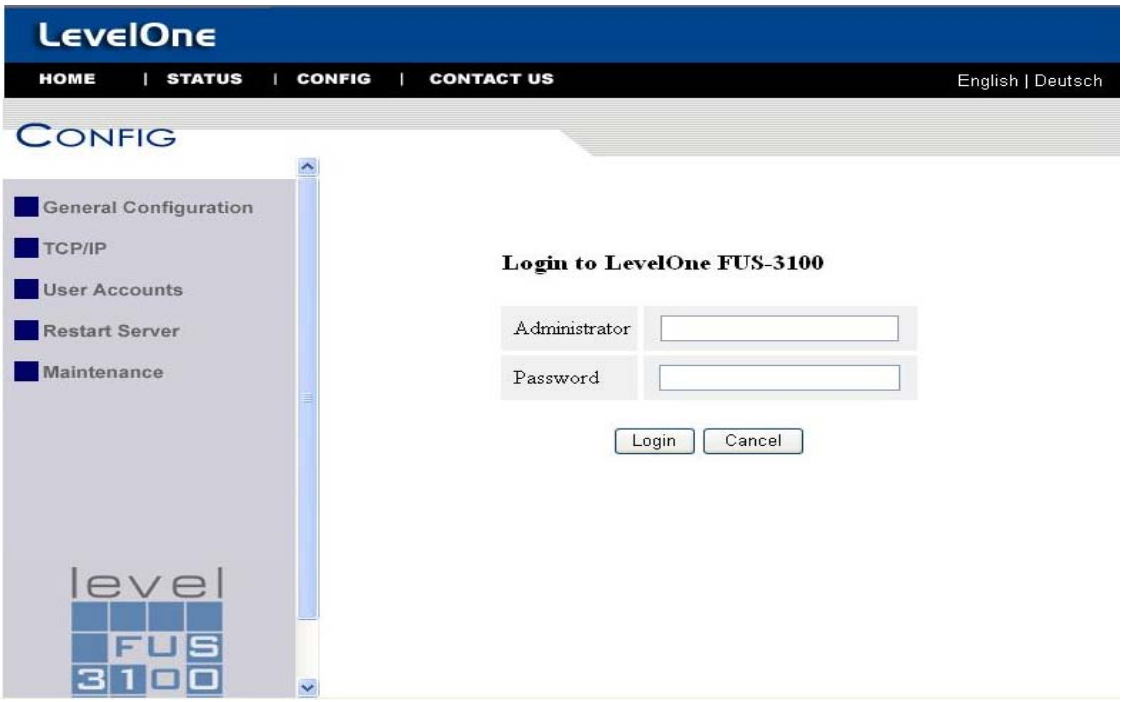
8. You have now finished the procedure of setting the IP address.

3.2.8 Setting the IP Address Using the Server's Web Pages

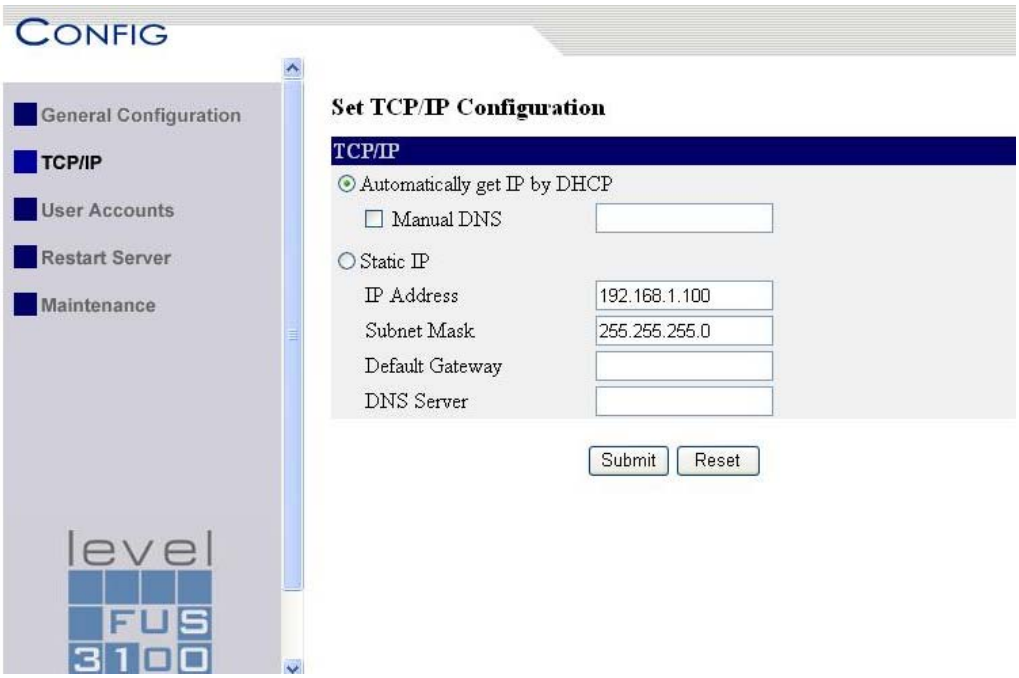
1. You can see the IP address of you Server in the Server List. Open IE Browser and enter the Server's IP address or click the Home Icon

of the Control Center.

2. Go to the web page and click **CONFIG** icon.



3. Enter administrator (default: *admin*) and password (default: *admin*).
4. Click **TCP/IP** icon.



5. Click the button corresponding to your choice of IP setting methods (static or dynamic). When assigning a static IP address you also have to define Subnet Mask and Default Gateway.

6. Click **Submit** to save your settings. And the Server will reboot. You have now finished the procedure of setting the IP address.

Chapter 4 Using the MFP Server

4.1 Introduction to the Software Bus Technology

For printers and scanners, there is no industrial standard. In order to support many different models of printers and scanners from various brands, we have adapted the new technology, called “Software Bus”. Software Bus is created to solve the compatibility issue. With the Software Bus technology, it is not necessary to implement printer/scanner drivers. Instead, it relies on printer/scanner drivers that are installed on PCs. In the field of traditional network print server, the common protocols used are, for example, SMB/CIFS, LPR, raw TCP, and IPP. However, in order to reduce cost, many printer vendors produce so-called GDI or host-based printers. For technical reasons, these kinds of printers can not work with the traditional network printer protocols. The Software Bus technology can also deal with this problem. The basic concept and the usage of Software Bus will be introduced in this chapter.

4.2 Connect & Disconnect

“Software Bus” allow you to use USB printers or USB MFPs as if they were connected directly to your PC although they are actually connected to the MFP server. The “Connect” operation is a software operation that simulates an actual plug-in USB device. The “Disconnect” operation is a software operation that simulates the disconnection of the USB device.

4.3 How to Use

4.3.1 Driver Installation

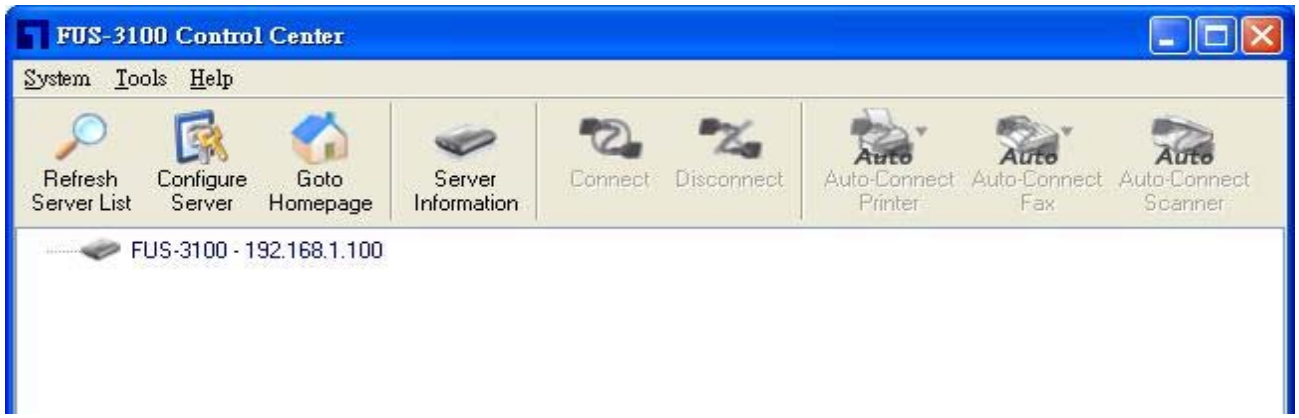
Here we will describe how to use the Software Bus technology to do driver installation for a USB device. Before using the Software Bus technology, you must first make sure that your PC can access the MFP server via TCP/IP. The simplest way to do this is using “Control Center” to search for the MFP server on the network and change its IP address to be the same subnet as your PC. If the MFP server and your PC are not in the same TCP/IP subnet, Control Center will show the MFP server in green, as the following figure. You must change the IP address (or using DHCP) of the MFP server so that the MFP server and your PC are in the same subnet. Control Center will show these MFP servers in blue, meaning you can safely access this MFP server.

Please see below steps for USB MFP driver installation.

A. Turn on MFP server and the USB device.

B. Connect the USB device to MFP server. The LED of the USB port will light-on.

C. Run the Control Center. In the “MFP Server List” window, you can see the host names and IP address of the MFP server (in blue) on the network, as the following figure.



D. Click the server. Then the USB device attached on the server will be shown.

E. Please prepare to refer to the USB device’s user manual for driver installation.

F. Click the desired USB device from the Control Center list and then click the “Connect” button to do the connect operation and get the ownership of the USB device, as the following figure. The computer name of the device owner will be shown at the end of the device.

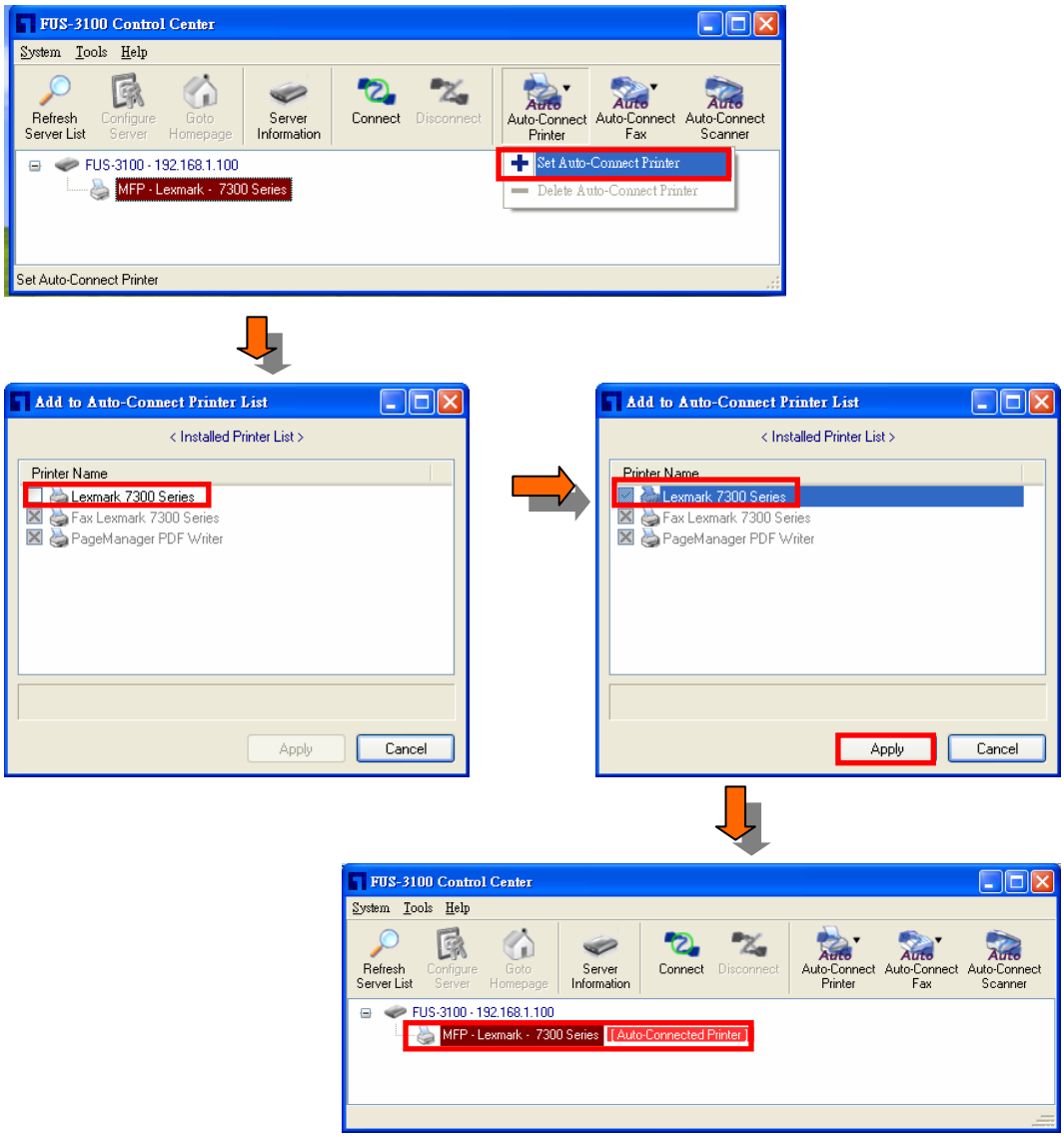
G. PC will automatically detect the plug-in of the USB device once user click “Connect” button. Please refer to the USB device’s user manual for driver installation.

After complete the driver installation, you can see the newly created devices on the PC. If the USB device is a MFP, you can see a new printer and a new scanner from the “Control Panel”.

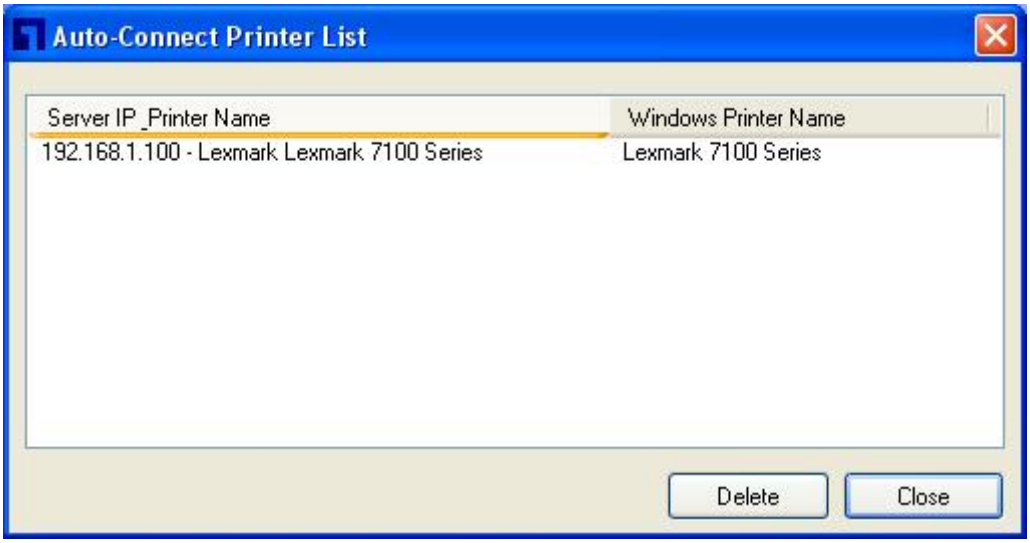
4.3.2 Set Auto-Connect Printer

After the complete the driver installation, you can see a newly created printer in the Control Panel’s “Printers and Faxes”. Please follow the below steps to do set Auto-Connect.

A. In the Control Center, click the MFP server that has the desired printer (or MFP) attached.
B. Click the desired printer (or MFP).
C. Click the “Set Auto Connect” button.



D. Choose the desired printer. The desired printer must be the Windows printer (this is a logical printer) that matches the printer attached on the MFP server (this is a physical printer). Then click the “Apply” button.
E. Then, Open control center, “Tools” menu, in the “Auto-Connect Printer List” you can see a newly created item that describes the association between the Windows printer and the physical printer on the server.

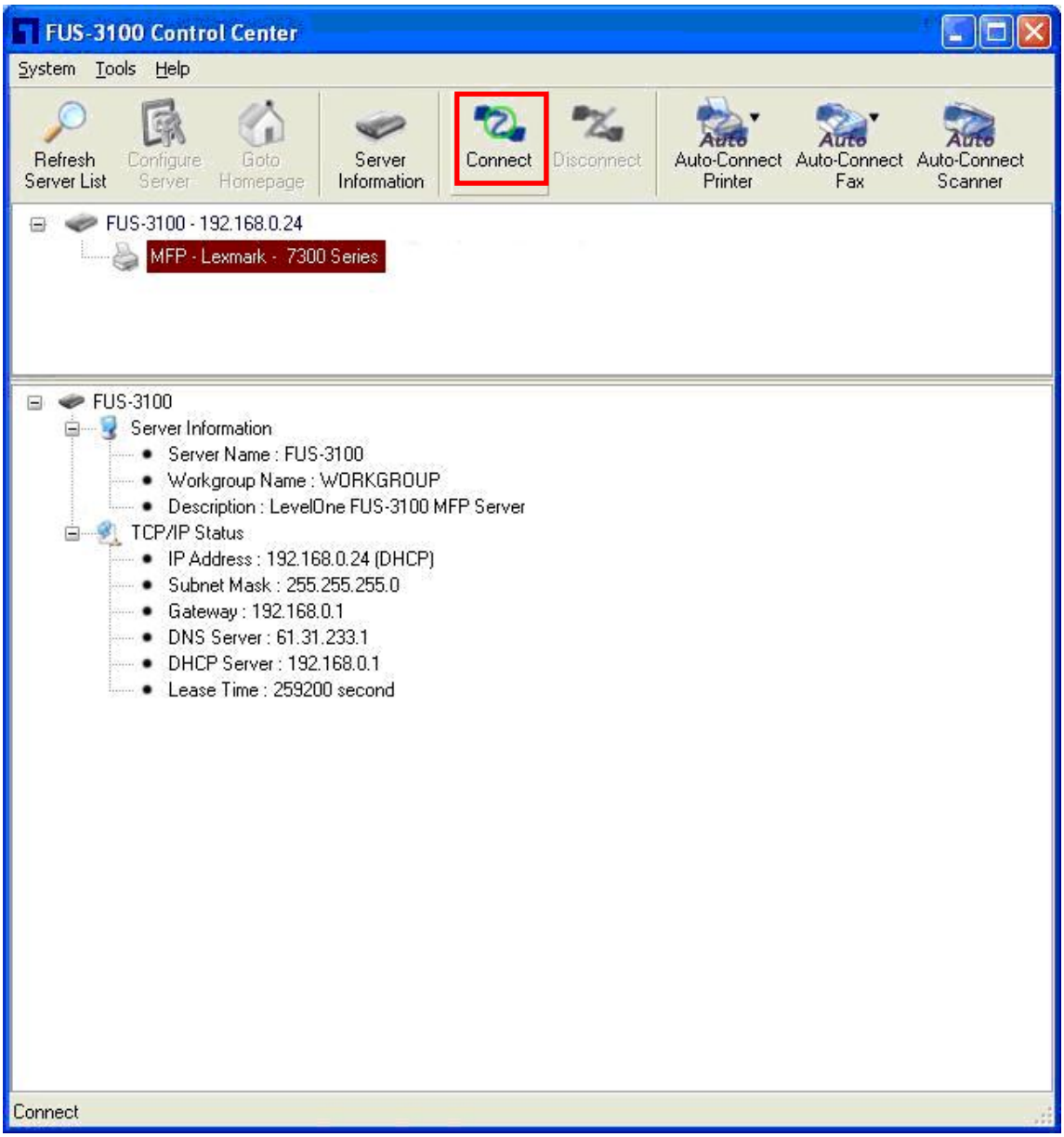


F. Please try to issue a print job to the desired printer. You will see the Control Center will automatically do a connect operation and, once the print job finished, it will automatically do a disconnect operation. This is so-called “Auto Connect / Disconnect” operation.
G. Even you already properly setup an auto-connect printer, the Control Center must be running while a print job is issued. This means you’d better run the Control Center every time after you login Windows. In order to skip this manually operation, you can make the Control Center be run automatically after you login Windows. To do this, choose the “Configuration” item in the “Tools” menu. The following window will appear. Click on the check box and then on the “OK” button. This feature is enabled by default.

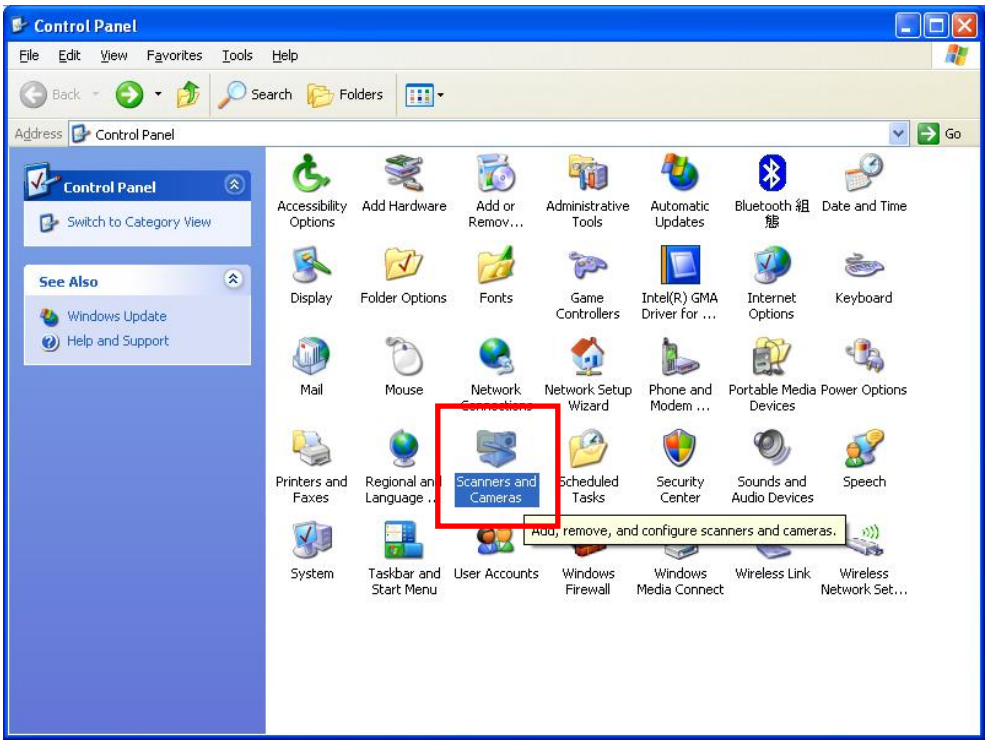
4.3.3 Manual-Connect / Auto-Connect Scanner

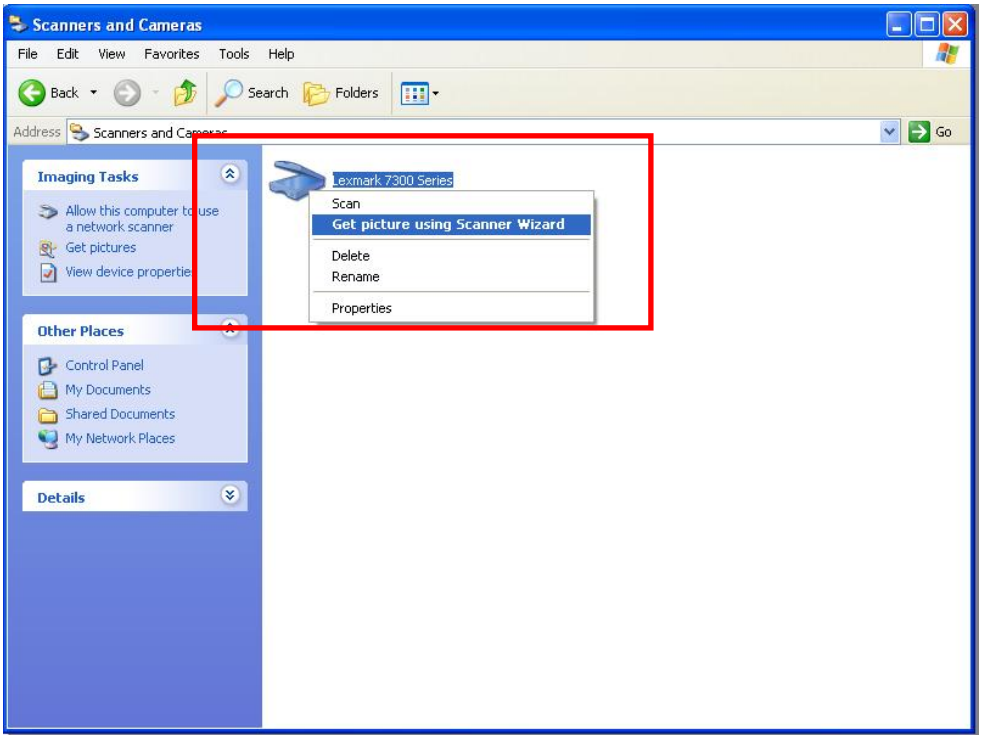
After installed the scanner driver, you can see a newly created scanner in the Control Panel’s “Scanners and Cameras”. Follow the steps below to do a manual-connect scanning.

A. In the Control Center, click the MFP server that has the desired scanner (or MFP) attached.
B. Click the desired scanner (or MFP)
C. Click the “Connect” button to manually connect the scanner (or MFP)



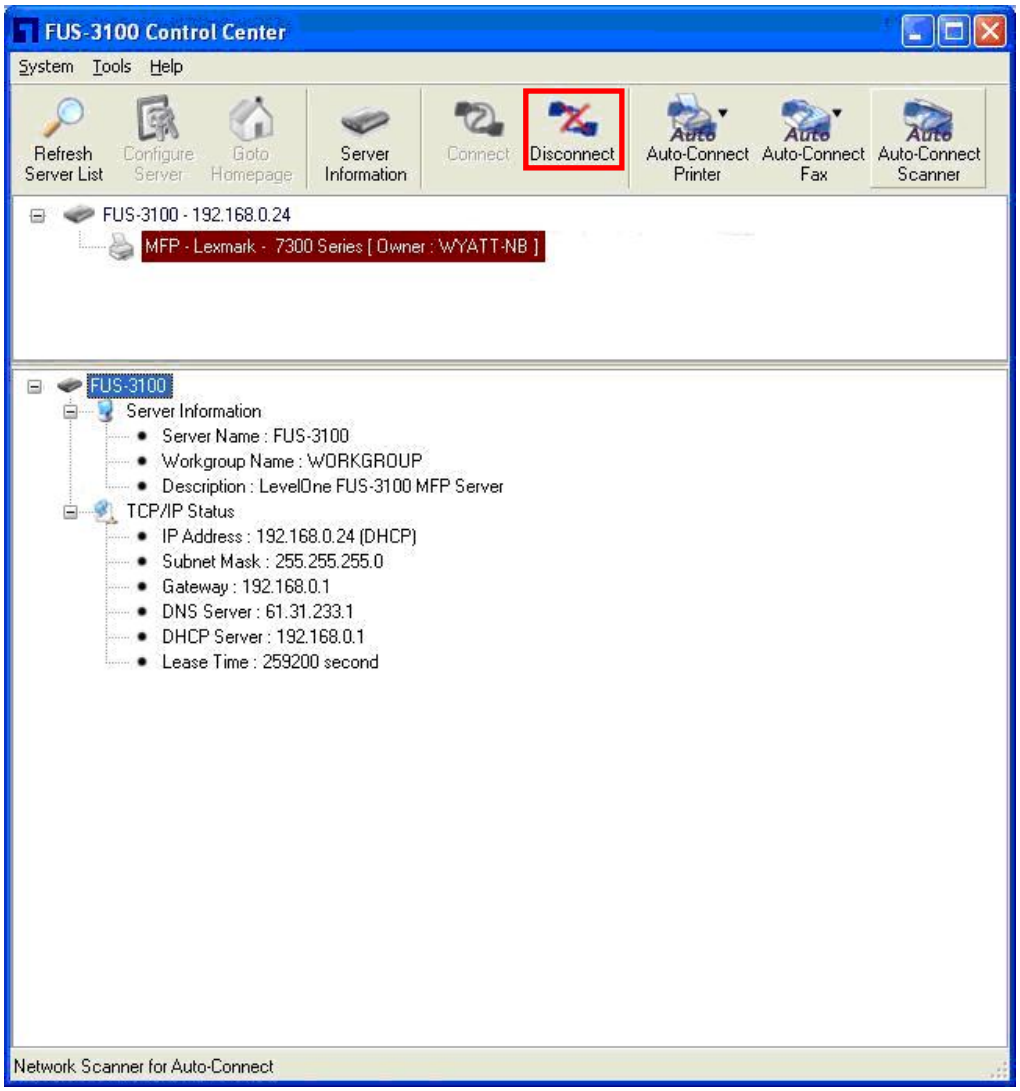
D. Right-click the scanner icon in the Control Panel's "Scanners and Cameras", and choose "Get picture using Scanner Wizard".


Control Panel
File Edit View Favorites Tools Help
Back Search Folders
Address Control Panel
Go
Control Panel
Switch to Category View
See Also
Windows Update
Help and Support
Accessibility Options
Add Hardware
Add or Remov...
Administrative Tools
Automatic Updates
Bluetooth 組態
Date and Time
Display
Folder Options
Fonts
Game Controllers
Intel(R) GMA Driver for ...
Internet Options
Keyboard
Mail
Mouse
Network Connections
Network Setup Wizard
Phone and Modem ...
Portable Media Devices
Power Options
Printers and Faxes
Regional and Language ...
Scanners and Cameras
Scheduled Tasks
Security Center
Sounds and Audio Devices
Speech
System
Taskbar and Start Menu
User Accounts
Windows Firewall
Windows Media Connect
Wireless Link
Wireless Network Set...
Add, remove, and configure scanners and cameras.

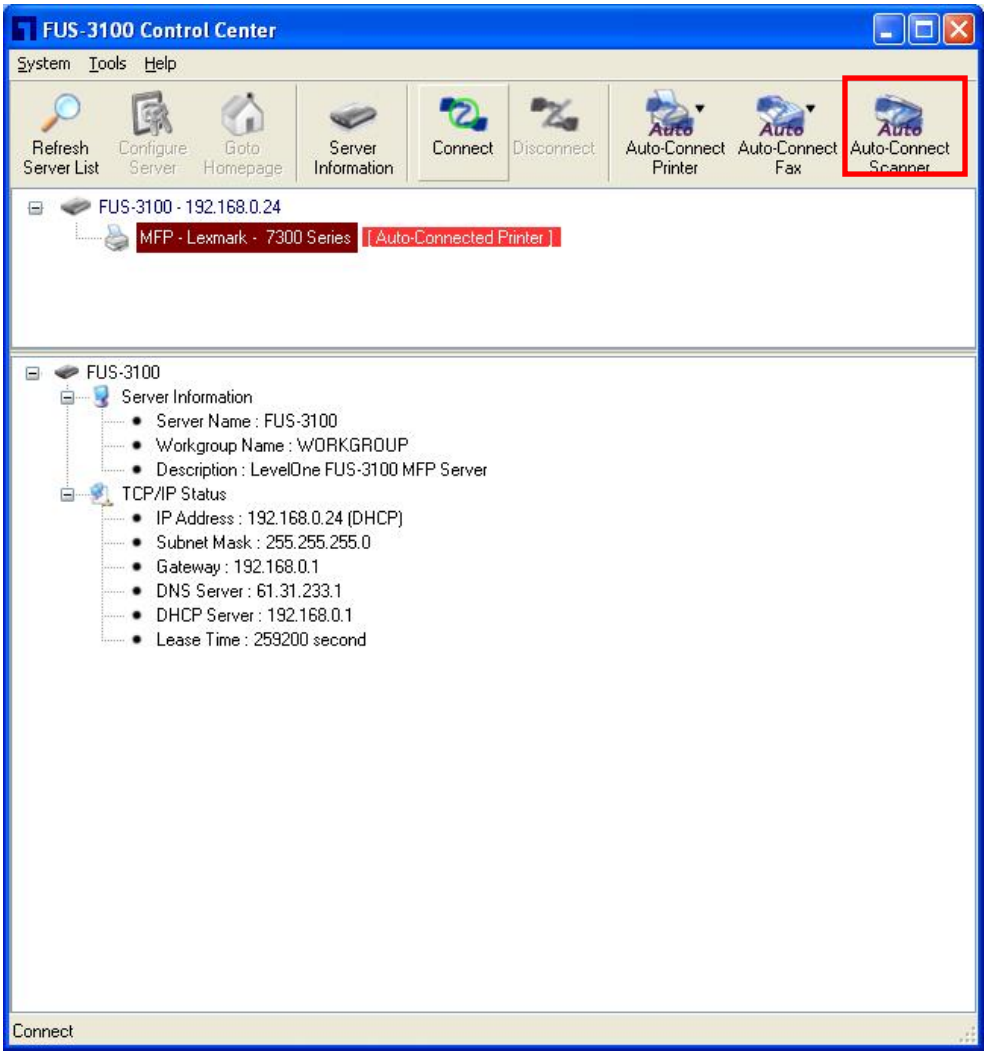

Scanners and Cameras
File Edit View Favorites Tools Help
Back Search Folders
Address Scanners and Cameras
Go
Imaging Tasks
Allow this computer to use a network scanner
Get pictures
View device properties
Other Places
Control Panel
My Documents
Shared Documents
My Network Places
Details
Lexmark 7300 Series
Scan
Get picture using Scanner Wizard
Delete
Rename
Properties

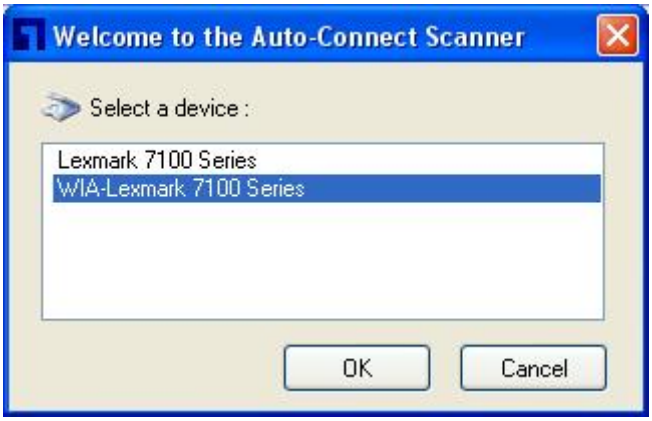
E. Then the “Scanner Wizard” will run. Set the options as your need. Then submit the scan job.

F. After the scanning finished, click the “Disconnect” button in the Control Center to release the ownership of the scanner (or MFP).



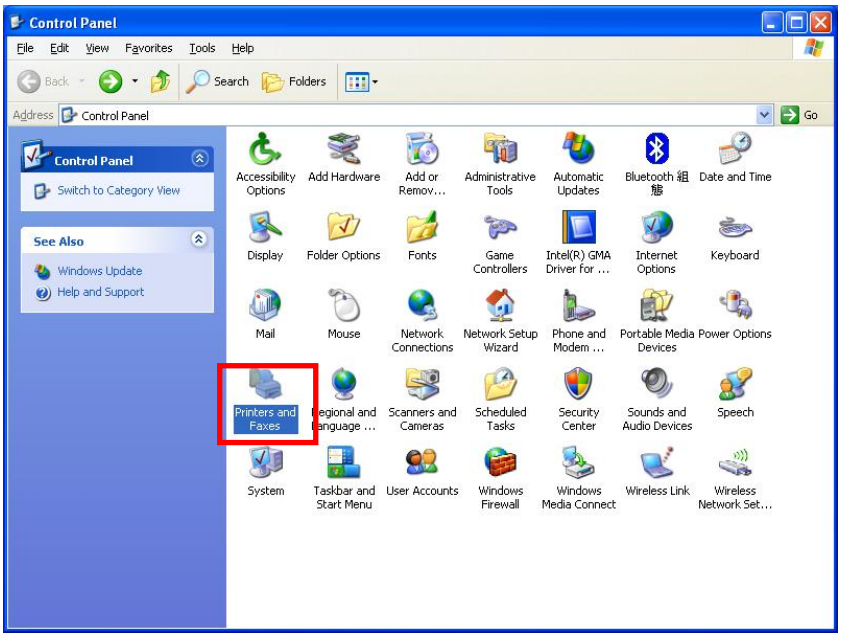
Another way is auto-connect scanning. In Control Center, click the desired scanner, and then click “Auto-Connect Scanner” button to select a device that you want to scan.





4.3.4 Manual-Connect / Auto-Connect Fax

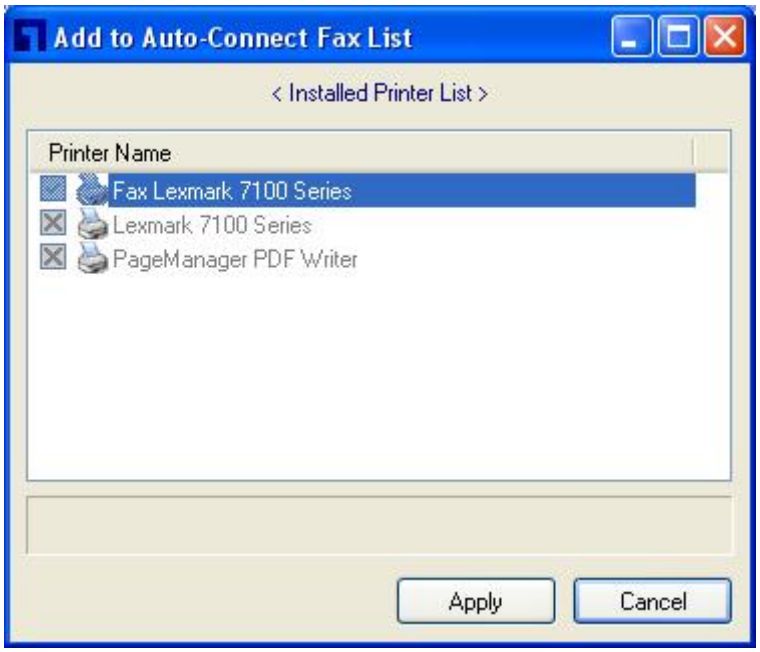
Some MFPs provide the PC Fax function. After remote installation of a MFP, you can see a newly created Fax printer in the Control Panel's "Printers and Faxes". Follow the steps below to do a FAX via MFP server.



A. In the Control Center, click the MFP server that has the desired MFP attached.
B. Click the MFP.
C. Click the "Connect" button.
D. Choose the desired fax printer to do printing.
E. Then the FAX wizard will show up. Please follow the instructions in MFP's user manual to send FAX as if the MFP is directly connect to PC.
F. After the fax job finished, click the "Disconnect" button in the Control Center to release the ownership of the MFP.

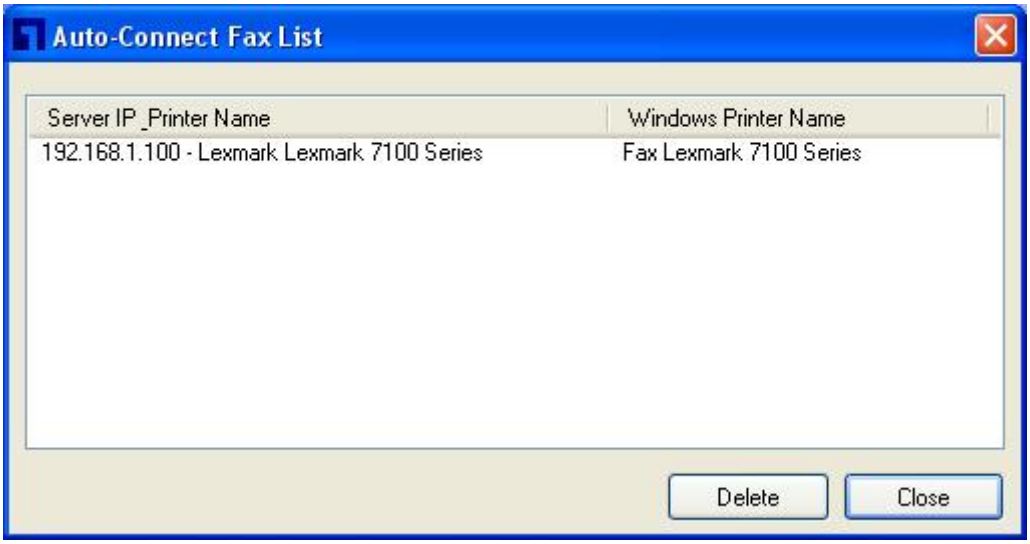
Another way is auto-connect FAX. The procedures are almost the same as "Set Auto-Connect Printer".

A. In the Control Center, click the MFP server that has the desired printer (or MFP) attached.
B. Click the desired printer (or MFP).
C. Click the "Set Auto Connect" button. The following figure will appear.



D. Choose the desired FAX printer. It must be the Windows FAX printer (this is a logical FAX) that matches the FAX attached on the MFP server (this is a physical FAX). Then click the "Apply" button.

E. Then, in Control Center, choose "Auto-Connect Fax List" in "Tool" menu. You can see a newly created item that describes the association between the Windows FAX printer and the physical FAX on the server.



F. Then try to issue a print job to the desired printer. You will see the Control Center will automatically do a connect operation and, once the print job (actually this is a FAX job.) finished, it will automatically do a disconnect operation.

4.4 Manual-Connect vs Auto-Connect

We recommend users not to use "manual connect/disconnect". Instead, use auto-print/auto-FAX/auto-scan so that Control Center will automatically connect/disconnect devices when required. This can work fine for most cases. However, there are still some cases that automatic connect/disconnect can not work. In these cases, users should use manual connect/disconnect to do print/scan/FAX. Once you use manual connect function, don't forget to

do a manual disconnect after using the MFP.

Take HP OfficeJet 5510 as an example. If you want to use vendor-supplied utility to send FAX with HP OfficeJet 5510, the “auto-connect FAX” can not work for some technical reason. In this case, users have the following alternative to solve the problem.

A. Use other applications like Microsoft Word, or Photoshop to send FAX. “Auto-connect FAX” can work well with most general applications.
B. Do a manual connect on HP OfficeJet 5510. Then begin to send FAX using vendor-supplied utility. After the operation, do a manual disconnect.

In summary, users should use manual connect/disconnect only when doing driver installation and when auto connect/disconnect can not work well.

4.5 Limitations

There are some limitations to use the Software Bus technology.

A. Supports Windows 2000/XP; ***Windows 98/ME is not supported.***
B. Only one PC can get the ownership of the same USB device at the same time.
C. USB storage, like pen drive and memory cards, is not supported in this version.

Chapter 5 The Control Center

This chapter describes how to use the Control Center.

5.1 Installing Control Center

1. Insert the included CD into the CD-ROM. The Autorun screen should appear.
2. Click **Utility** button to begin the installation.
3. Follow the on screen instruction to step through the installation.

5.2 Using the Control Center

5.2.1 Using Tools of Control Center

You can use the following tools to help you use the server:

- *Refesh Server List* : renew to auto search the existing servers in the network
- *Configure Server* : configure the MFP server
- *Goto HomePage* : configure the MFP server via IE browser.
- *Server Information* : display Server Information and TCP/IP Status

Note 1: You can also right-click the mouse button on the server to get the “Configure Server” and “Goto HomePage” functions.

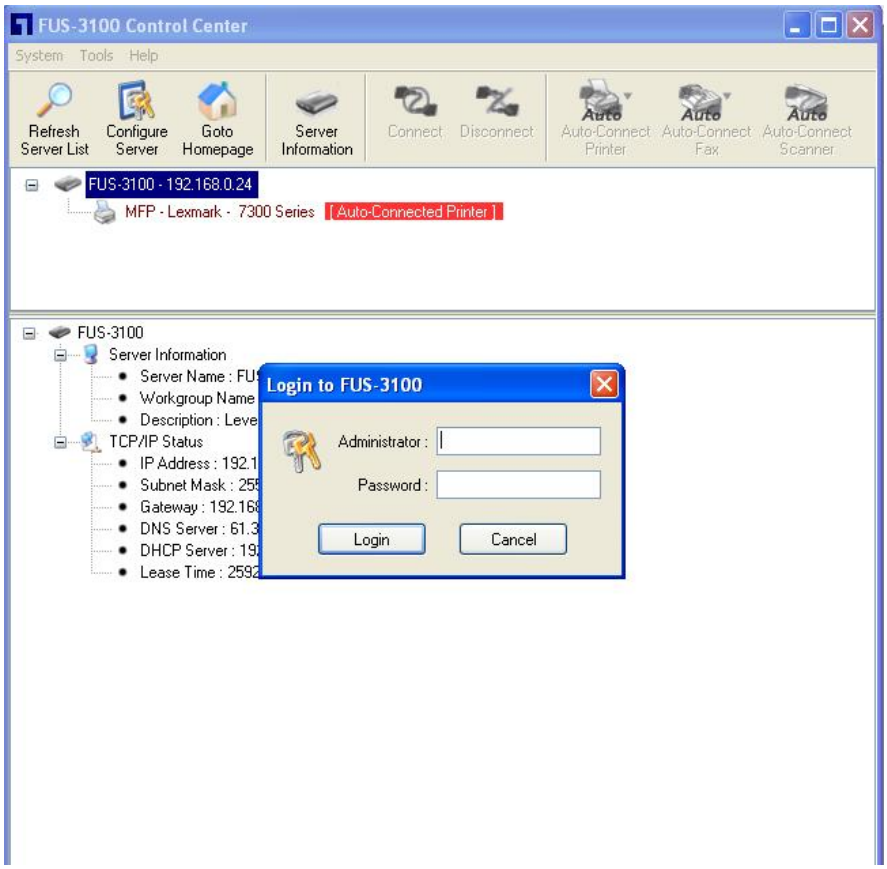
Note2: You can also double-click on the server to get the “Configure MFP Server” function.

5.2.2 Displaying Server Status

You can start the Control Center and select your Server to see its status which includes Host Information, TCP/IP Status.

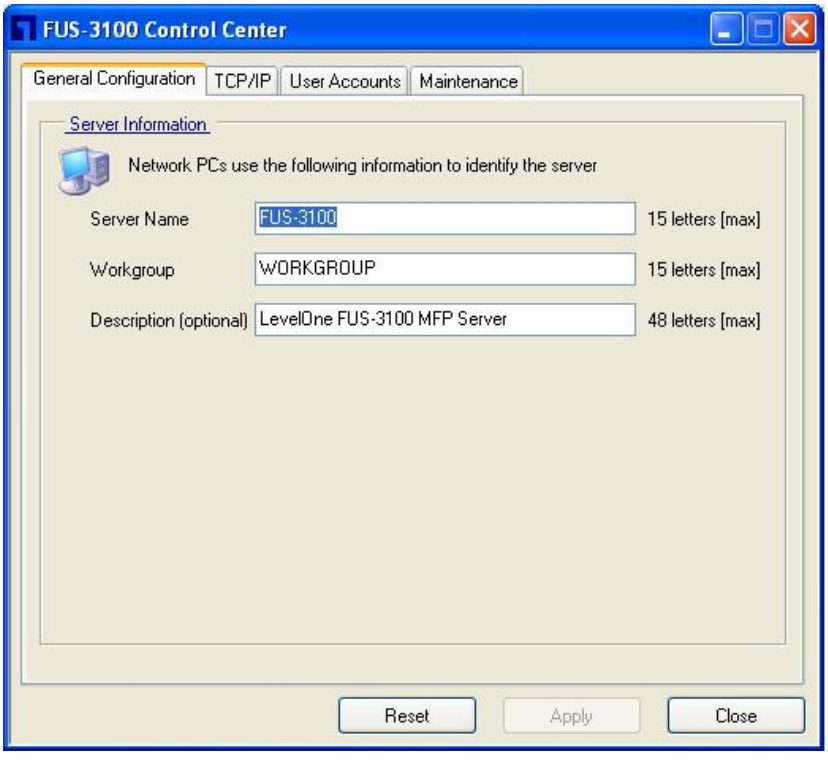
5.2.3 Setting up Server Configuration

Click the “Configure Server” button to setup the select server. Then type the administrator ID and password to login.

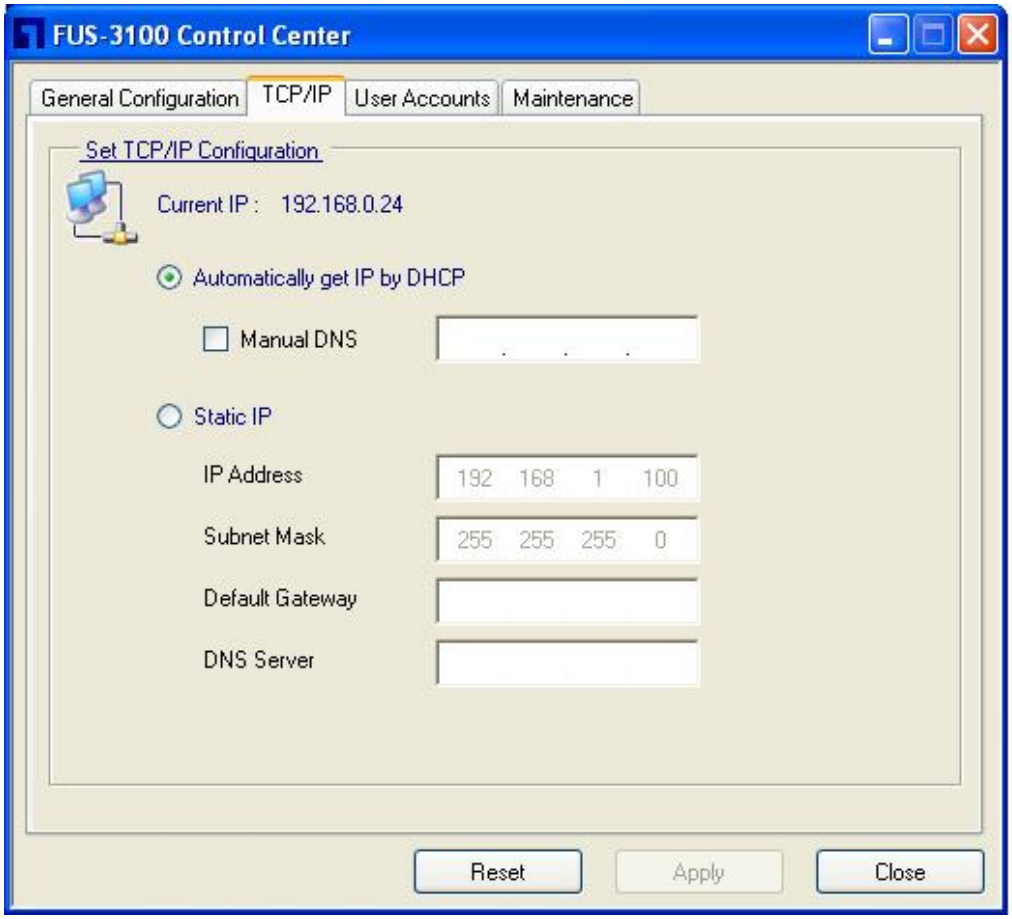


■ General Configuration

- **Set Host Information:** You can set basic host information for the server:
  - ☑ *Server Name*
  - ☑ *Workgroup*
  - ☑ *Description*

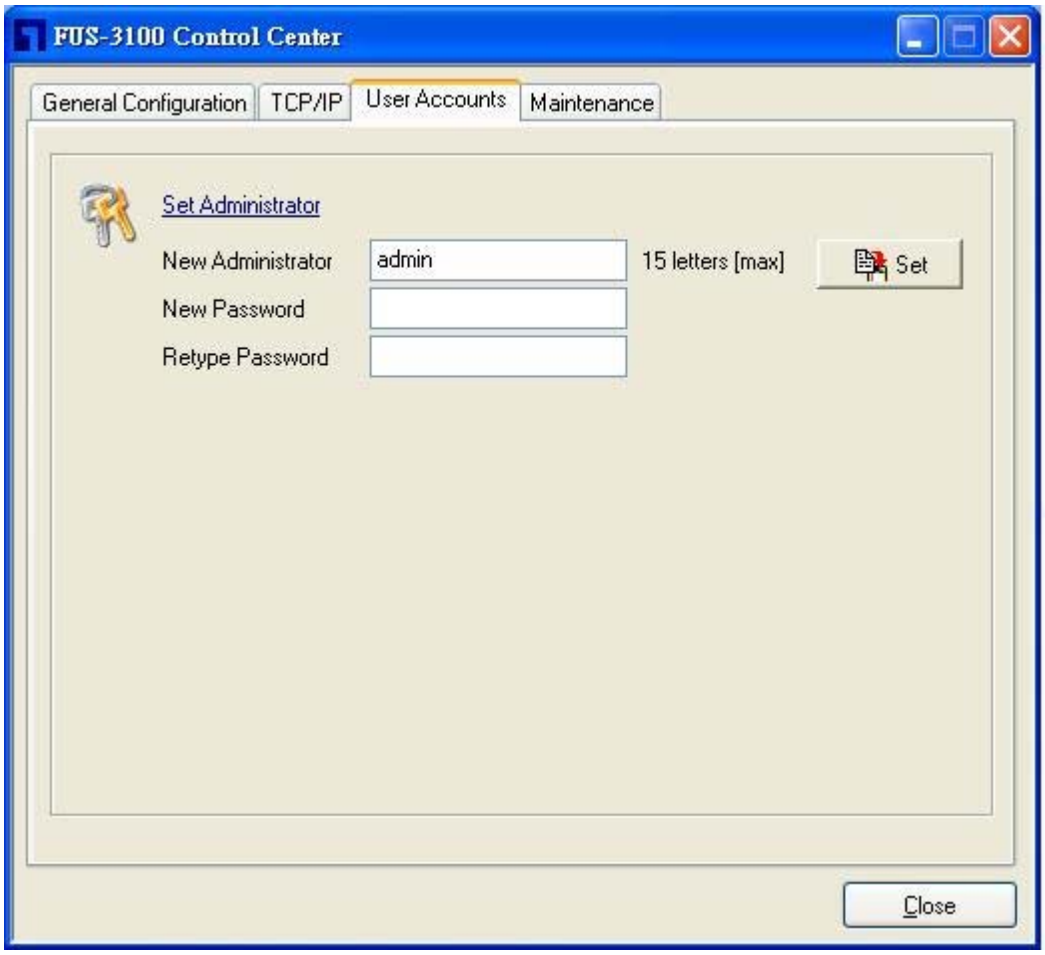


- **TCP/IP:** You have to set the Server's TCP/IP configuration to connect TCP/IP network. Please see the chapter on Basic Installation for more details.



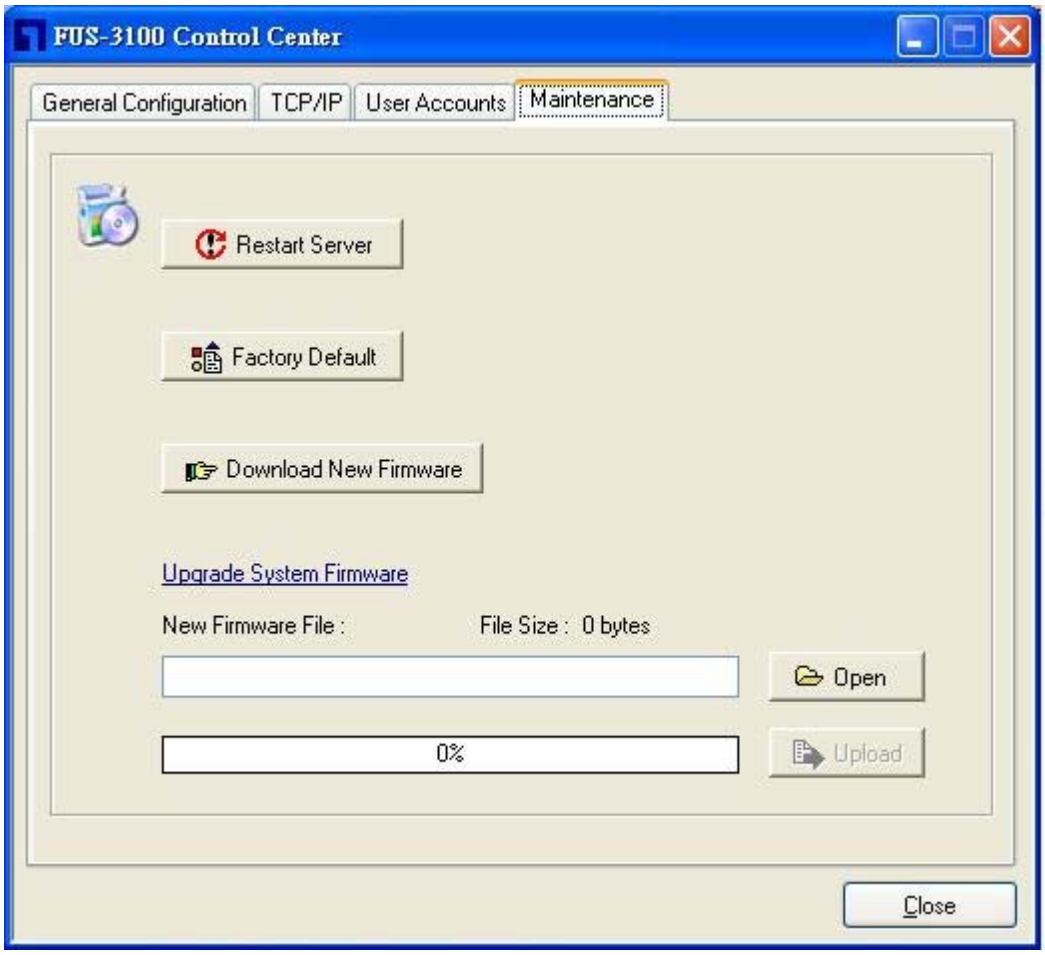
- **User Accounts:** You can change administrator name and its password. If you forgot administrator name and password, you must to perform Restore Factory Default action by plugging in the power adaptor while pressing the Init button. Please refer to the chapter "Restore Factory Defaults".

  - **Set Administrator**
    - ☑ *New Administrator:* enter your desired administrator name.
    - ☑ *New Password:* enter your desired password.
    - ☑ *Retype Password:* confirm your previous password typing.



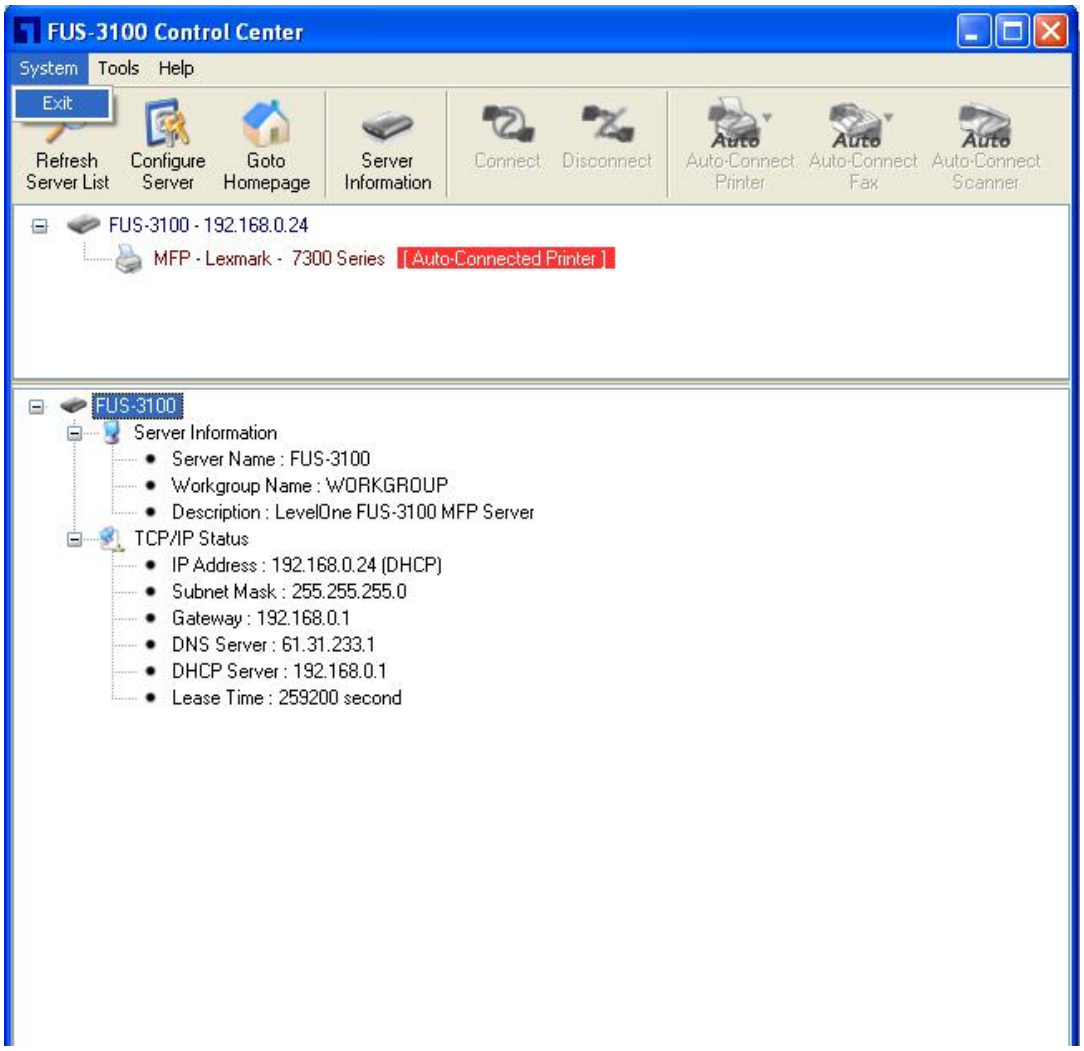
- **Maintenance:** If you want to restart the Server, restore the Server to factory defaults, download new firmware file from product's public website and upgrade new firmware, you can use the Maintenance tool.

  - **Restart Server:** click this button, the Server will restart.
  - **Factory Default:** click this button, the Server will restore factory default values.
  - **Download New Firmware:** click this button to download new firmware or user software from this product's public website.
  - **Upgrade Firmware:** click **Open** to find the firmware file to be upgraded. Click **Upload** to upload the firmware into the Server.



5.3 Quitting the Control Center

The Control Center doesn't really quit if you click the "X" box (close box) at the top right corner of the window. Instead, it just minimizes itself to the system tray. There are two ways to really close the Control Center. The first way is choosing "Exit" item in the "System" menu in the Control Center.



The second way is right-clicking the icon of the Control Center in the system tray and choosing the “Exit”.

Chapter 6 MFP Server's Web Pages

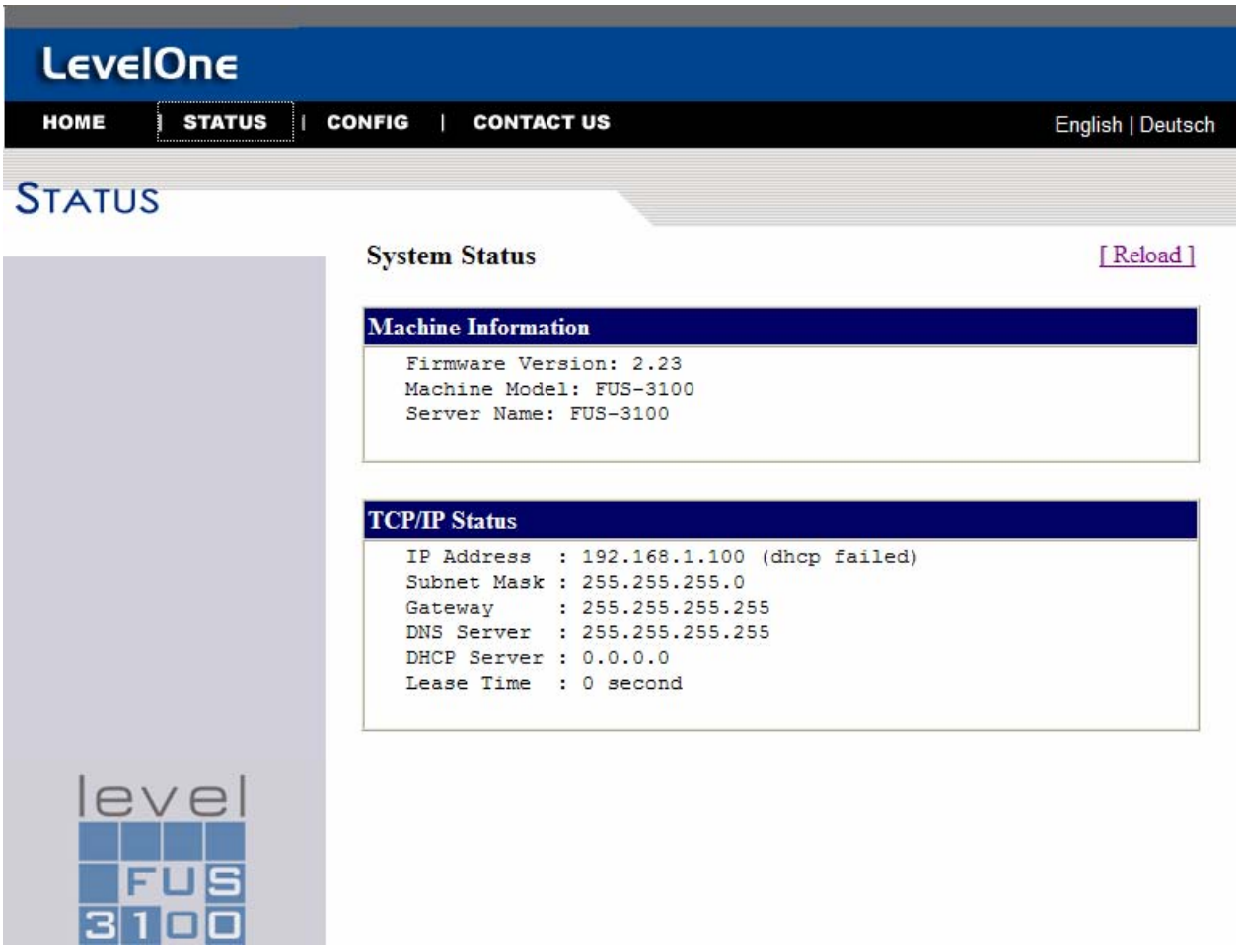
6.1 Introduction

The Server runs the daemon of http server, *http://serverIP* on TCP port: 80. Users may use the web pages to see the Server's system status and configure the Server.

6.2 Using the Server's Web Pages

6.2.1 Displaying Server Status

You can see the status of Server Information and TCP/IP.



6.2.2 Setting up Server Configuration

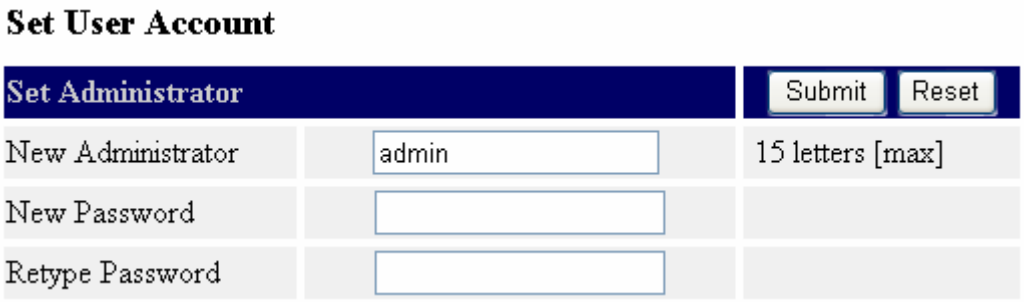
To set up the Server configuration, the system will request user to enter administrator (default: *admin*) and password (default: *admin*) to login.

- **General Configuration**
  - **Set Host Information:** You can set some basic host information for using the server:
    - ☑ *Server Name:* the name to represent the Server

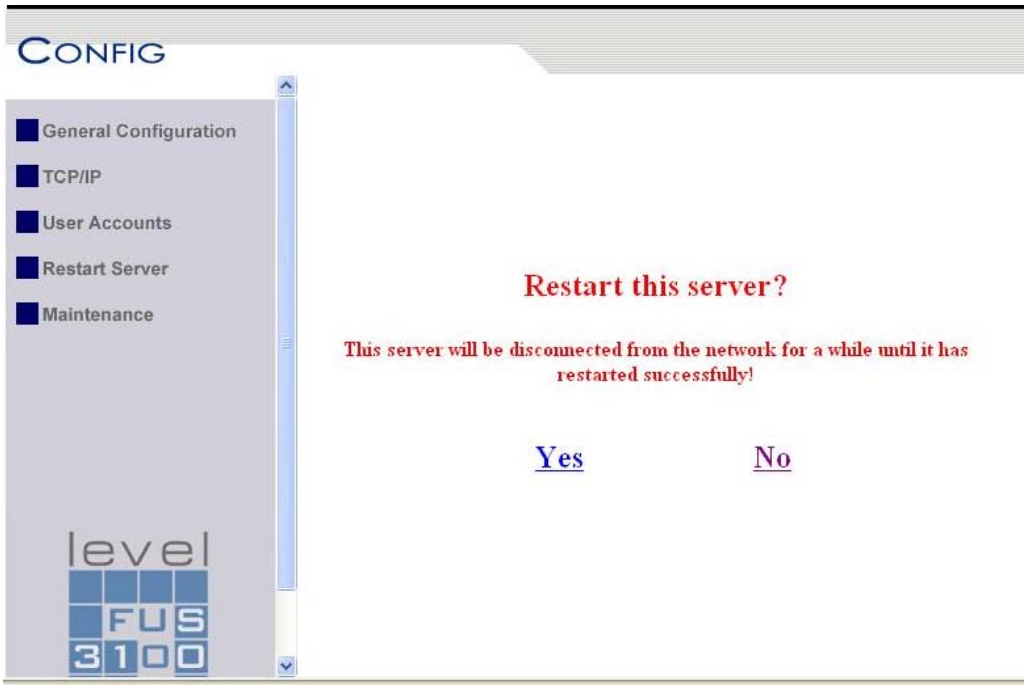
- **TCP/IP:** You have to set the Server's TCP/IP configuration to connect TCP/IP network. Please see Chapter 3 Basic Installation for more details.

- **User Accounts:** You can change administrator name and password. If you forgot administrator name and password, you must perform Restore Factory Default action by plugging in the power adaptor while pressing the Init button. Please refer to the chapter "Restore Factory Defaults".

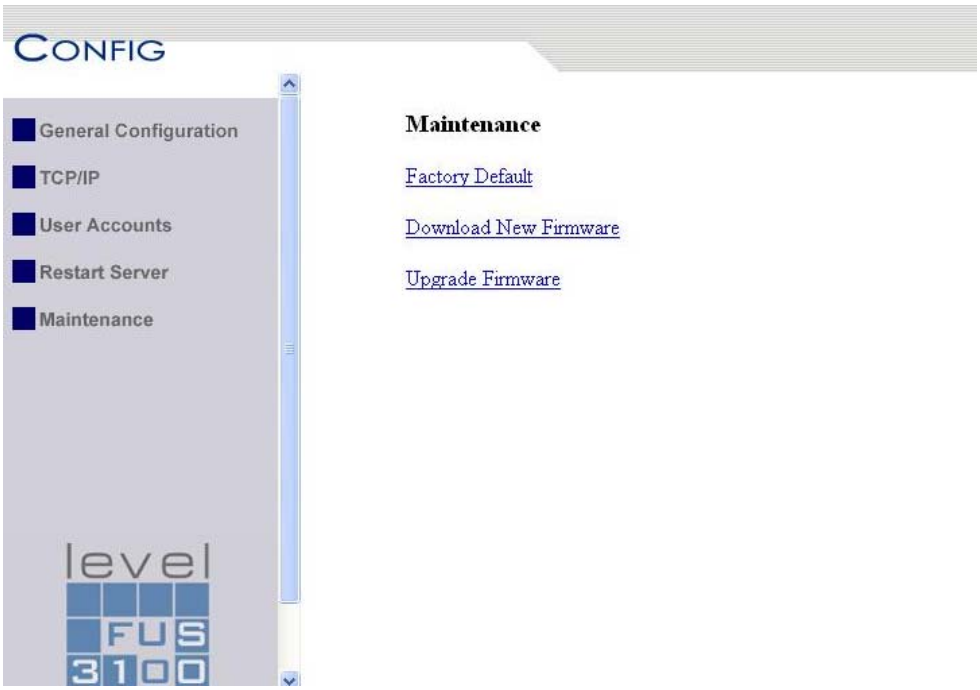
  - **Set Administrator**
    - ☑ *New Administrator:* enter your desired administrator name.
    - ☑ *New Password:* enter your desired password.
    - ☑ *Retype Password:* confirm your previous password typing.



- **Restart Server**: click this button, the Server will restart.



- **Maintenance** If you want to restore factory default values of the Server and upgrade new firmware, you can use the Maintenance tool.
  - ☑ **Factory Default:** click this button, the Server will restore factory default values.
  - ☑ **Download New Firmware from Website:** click this button to download new firmware or user software from this product's public website.
  - ☑ **Upgrade Firmware:** click **Open** to find the firmware file to be upgraded. Click **Upgrade** to upload the firmware into the Server.

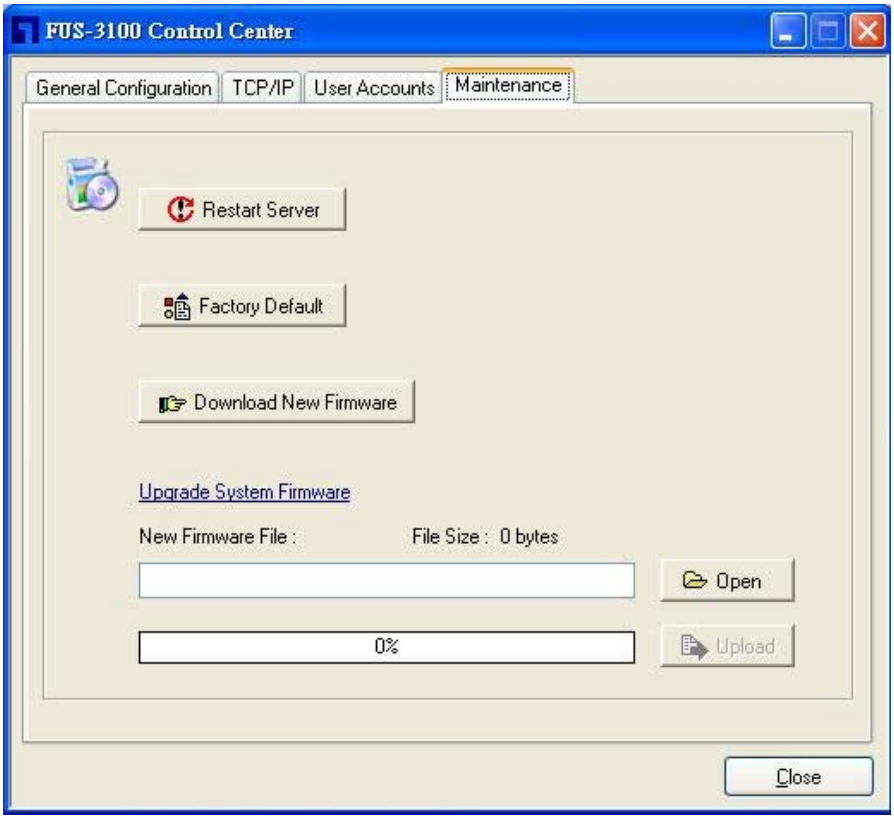

CONFIG
General Configuration
TCP/IP
User Accounts
Restart Server
Maintenance
level
FUS
3100
Maintenance
Factory Default
Download New Firmware
Upgrade Firmware

Chapter 7 Upgrade Firmware

This chapter describes how to upgrade firmware. Please follow one of the following Procedures:

Procedure A: Using the Control Center

1. Open Control Center. It will automatically search the existing Servers and display their statuses.
2. Select the Server that you want to upgrade the firmware. Double click the selected Server and enter Administrator (default: *admin*) and Password (default: *admin*).
3. Select the **Maintenance** button.
4. Click **Open** to find your new firmware file and click **Upload** to start upgrading the firmware.
5. Wait for 15 seconds for system reboot.



Procedure B: Using the Server's Web Pages

1. Power on the Server. Suppose that the Server is in DHCP mode.
2. Check the Server's IP address.
3. First, run Control Center. It will automatically search for Servers on the LAN. Then Servers' IP addresses will be shown in Control Center.
4. Run any Web browser, like Microsoft Internet Explorer. Go to *"http://Server's IP address "*or *"http://Server's Host Name"* to access the Server's home page.
5. Click **CONFIG** at the top of the menu.
6. Login the Server with Administrator (default: *admin*) and Password (default: *admin*).
7. Click **Maintenance**.
8. Click **Upgrade Firmware**.

9. Click **Browse** button to choose the file of new firmware.
10. Click **Upload** button to start firmware upgrade.
11. Wait for 15 seconds for system reboot.

Chapter 8 Restore Factory Defaults

You may restore the Server's default parameters by one of the following methods.

8.1 Using the Control Center

1. Start the Control Center.
2. If the tool finds Servers in your local area network, then you have to select a Server from the Server List.
3. Double click the highlight list and enter the Server's administrator (default: *admin*) and password (default: *admin*).
4. After you have logged in successfully, from the Server menu, select **Maintenance**. The **Maintenance** dialog appears.
5. Click **Factory Default.**

8.2 Using the Server's Web Pages

1. Go to the Server's web page and click **CONFIG**
2. Enter administrator (default: *admin*) and password (default: *admin*).
3. Click **Maintenance**.

4. Click **Factory Default**.

5. Click **Yes** to confirm

8.3 Using Init Button

Plug in the power adaptor while pressing the Init button until LED indicators of Power, USB blink. After that, plug off the power adaptor and then plug in the power adapter again to restart the Server. Finally, the Server will operate using the Factory Default values.

8.4 Default Parameters List

Host Information

- Server Name: FUS-3100

TCP/IP

- Automatically get IP by DHCP: Enabled
  - Manual DNS: None (Disabled).
- Static IP: Disabled
  - IP Address: 192.168.1.100
  - Subnet Mask: 255.255.255.0
  - Default Gateway: none
  - DNS Server: none

User Accounts

- Administrator: admin
- Password: admin

Chapter 9 The Init Button

The Init button is used for the maintenance: Plugging in the power adapter while pressing the Init button until USB indicators blink alternately. After that, the Server will do the following tasks:

A. Reset the Server to factory default, which will restore most of the parameters and settings to factory default values,
B. Perform a TFTP server. You can upgrade new firmware using the “Image Burner” utility.

Note: After performing the tasks mentioned above, you have to plug off the power adaptor and then plug in the power adaptor to restart the Server.

Chapter 10 Troubleshooting

This chapter provides useful information to help you resolve difficulties that you may experience with your Server. Fault symptoms, possible causes, and remedial actions are provided within a quick reference table. This Server’s USB ports only support MFPs, printers, scanners, and mass storage.

10.1 LED Indicators

Indicators	Color/Behavior	Description
Power	Green	Power On
	Not lit	Power off/System error
Link	Green	Network connected
	Not Lit	No physical connection to network
ACT	Green blinking	Activity on network
	Not lit	No activity on network
USB	Green	USB device connected
	Green blinking	Connected USB device not supported
	Not lit	No physical connection to USB device

10.2 If Auto-Connect does not work

Please try Manual-Connect to the MFP via Control Center utility if Auto-Connect does not work properly.