

11. Network Printer Server

11.1 Network Printer

11.1.1 Network Card Model Names

- SCX-5315 Series : McKinley Plus
- SCX-4720 Series : Rocky2_SEC
- SCX-4720FN : Rocky2(Sec)_Plus - Phy B'd Network Basic Model
- SCX-6x20 Series : McKinley2_SEC
- SCX-6x20FN : McKinley2_SEC - Network Basic Model
- SCX-5x30 Series : Elbert - Network On board, Network Basic Model
- SCX-6x22 Series : Elburz - Phy B'd Network, Network Basic Model
- CLX-3160 Series : Iris - Network On board, Network Basic Model
- SCX-4725FN : Whitney2 - Network On board Network Basic Model
- SCX-6x45 Series : Jungfrau - Network Basic Model (PCI)

11.1.2 Optional Network Card Model Names

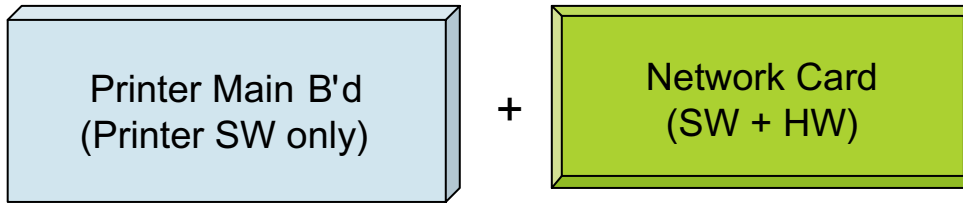
- ML-00NB, ML-00NC, ML-00NE, ML-00NF, CLP-N600A
: Optional internal wired network card for PRINTER
- ML-00LB, ML-00LC, ML-00LE, ML-00LF, CLP-N600B
: Optional internal wired/wireless network card for PRINTER
- ML-00NA
: Old optional internal wired network card
- SCX-00NB
: Optional internal wired network card for MFP
- SCX-00LA
: Optional internal wired/wireless network card for MFP
- SCX-00NA
: Optional internal wired network card for McKinley plus only
- SCX-6320NA
: Optional internal wired network card for McKinley2 only

11.1.3 External Network Card Model Names

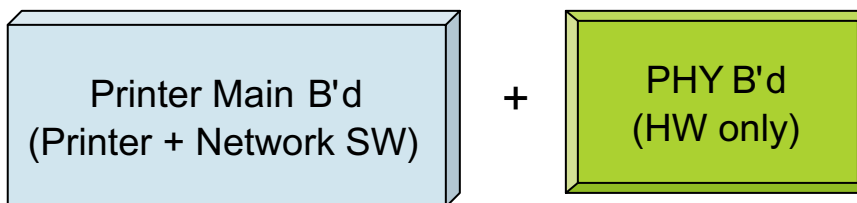
- ML-00LA: External wired/wireless network printer server
- ML-00ND: External wired network printer server

11.2 Printer Connection Method

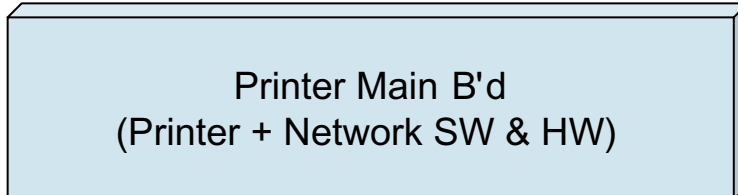
- Network Card Type

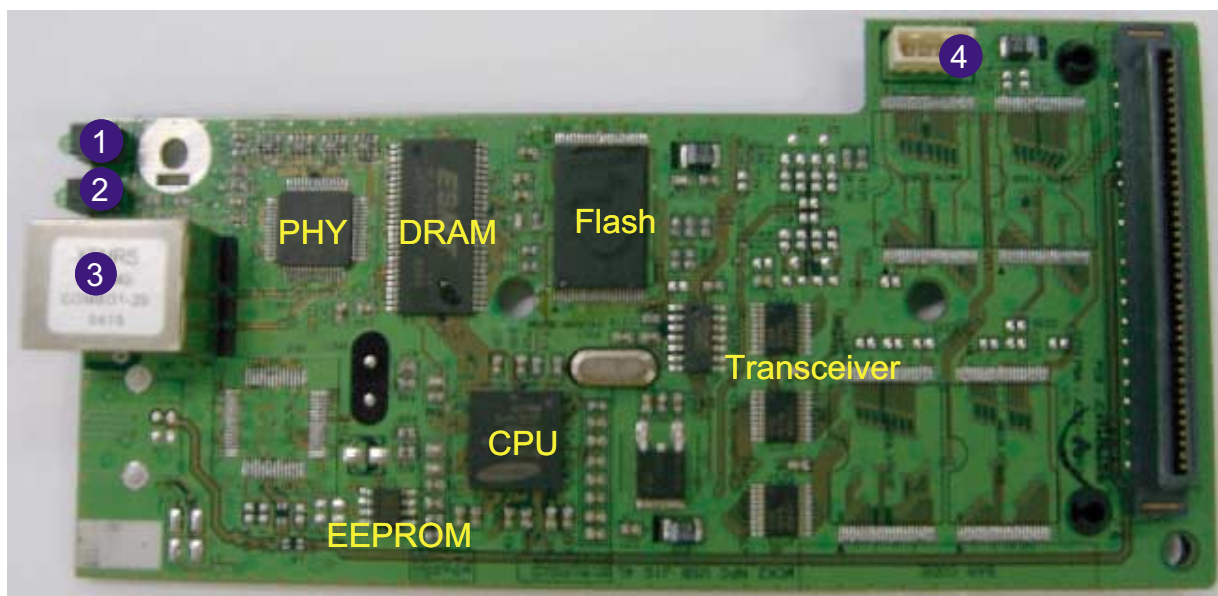


- PHY Board Type



- Network Printer on-board Type



- Network Card (SCX-6320NA/SEE)

1 Link LED

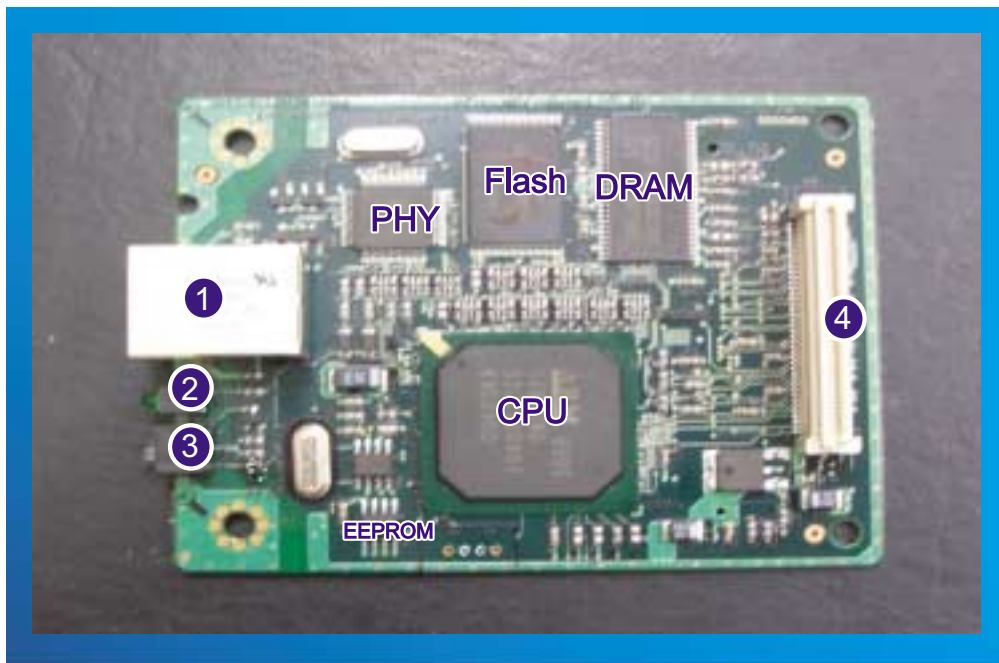
2 Activity LED

3 RJ-45 Modular Jack

4 Serial Interface for Debugging

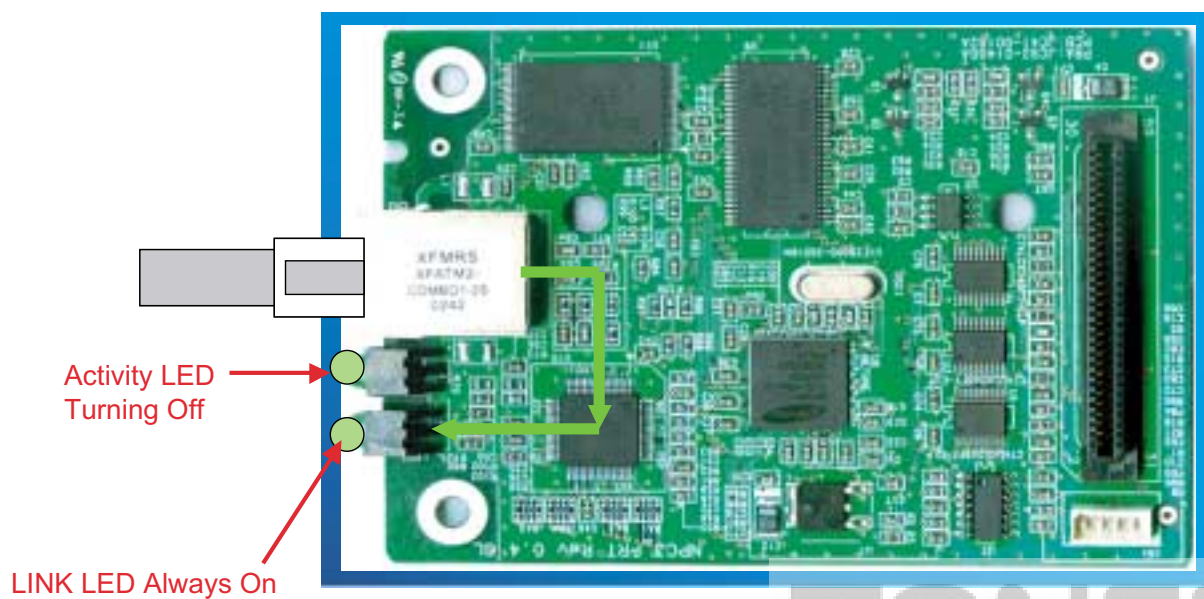
- Network Card (NPC3H)

- ML-3561N
- CLP-600N
- ML-00NF/00LF
- CLP-N600A
- CLP-N600B
- SCX-6x45 Series

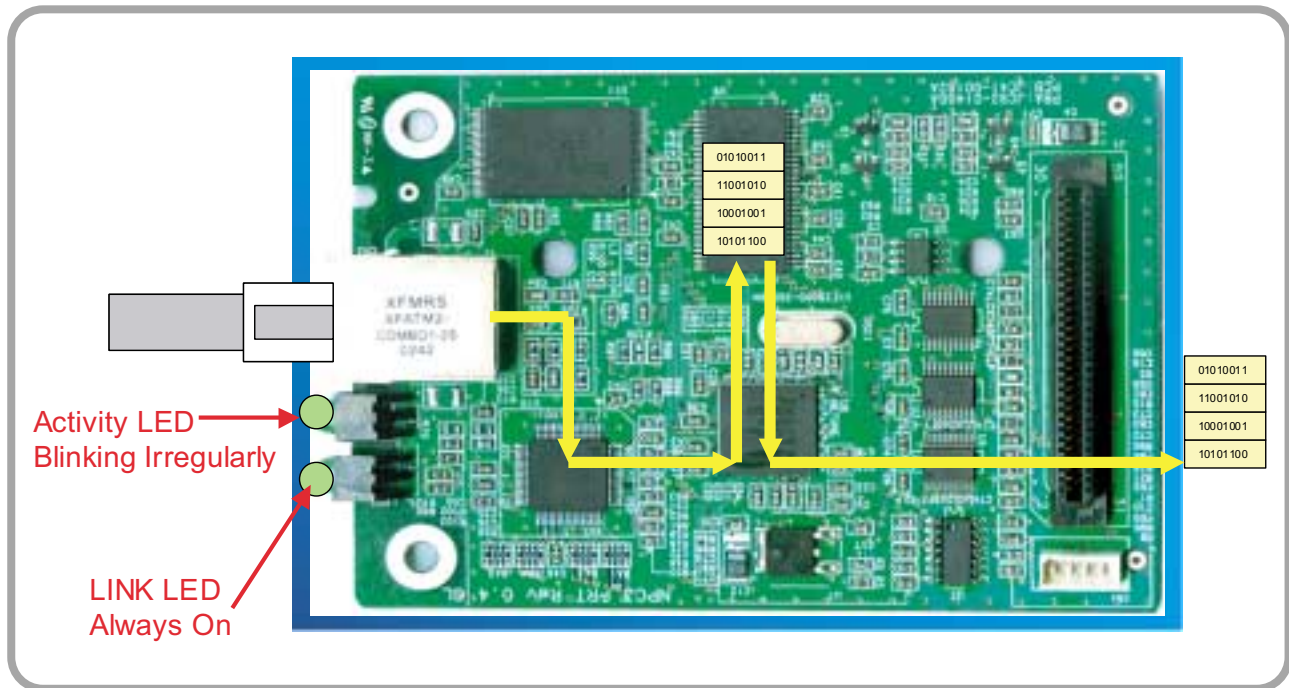


- | | |
|----------------------|-------------------------|
| ① RJ-45 Modular Jack | ③ Link LED |
| ② Activity LED | ④ Printer I/F Connector |

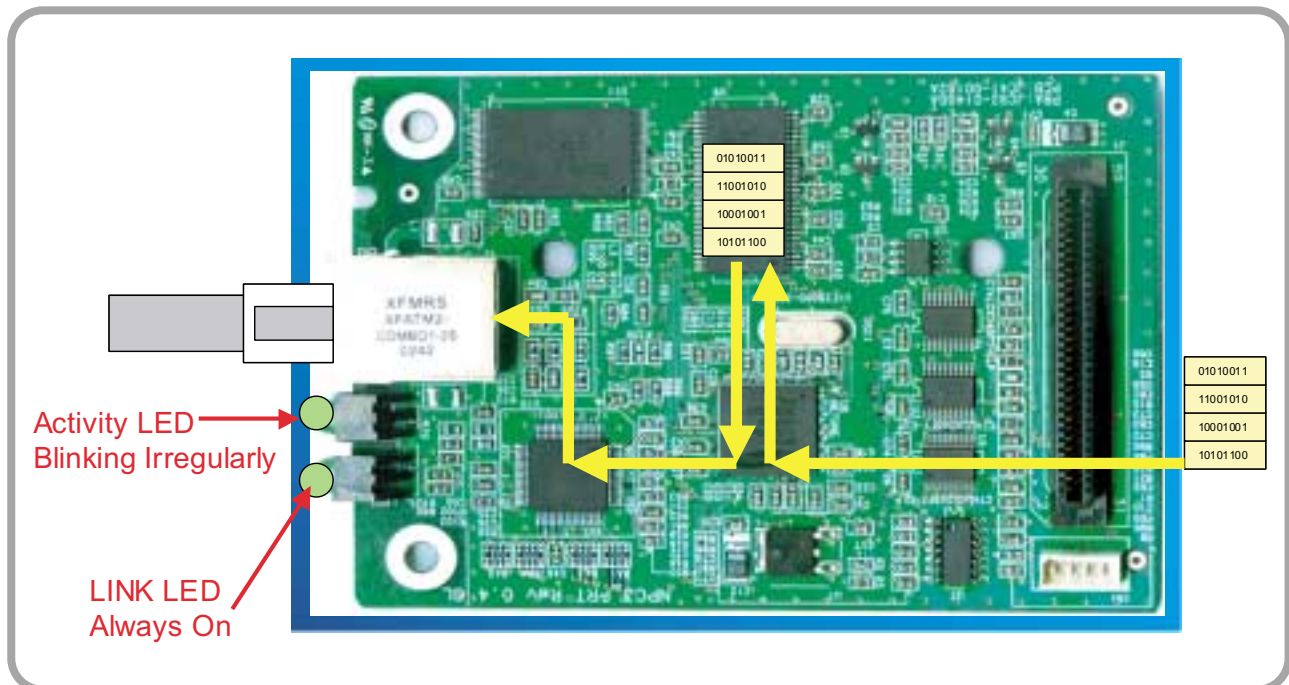
- Link Sequence



- Network Data Reception



- Network Data Transmission



11.3 Network Card Firmware

Firmware Components

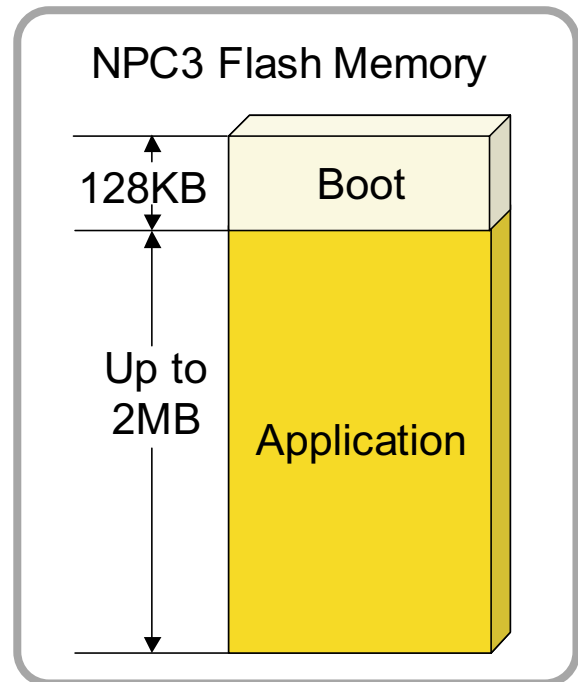
- Boot code ROM
- Application code ROM

Boot Code ROM

- Power-on initialization
- Mostly model-independent

Application Code ROM

- Doing major functions
- Model-dependent program



11.4 Network Card Firmware : Upgrade

Firmware Upgrade

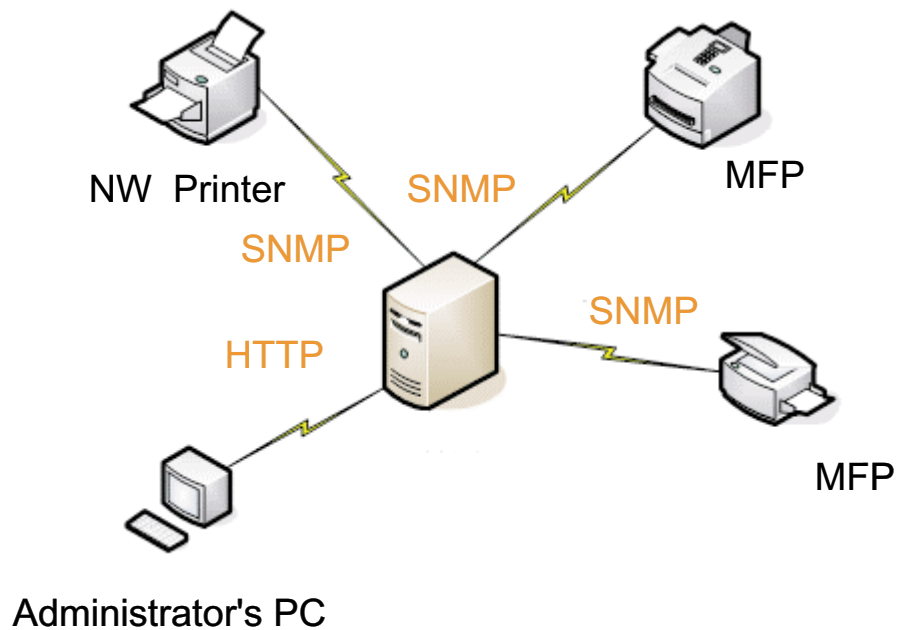
- To upgrade network card firmware with latest version
- Use TFTP Protocol (Network Card Type Only)
- Use HTTP Protocol (Embedded Web Server, SWS, SWAS)

Requirements

- Target Network Card
 - Well Configuration of TCP/IP Protocol
 - In Local Area Network with Server Computer
- Server Computer
 - Well Configuration of TCP/IP Protocol
 - Samsung SyncThru Application in case of using TFTP.
 - SyncThru Web Service (SWS) in case HTTP.

11.5 SyncThru Web Admin Service Web based Printer Management Solution

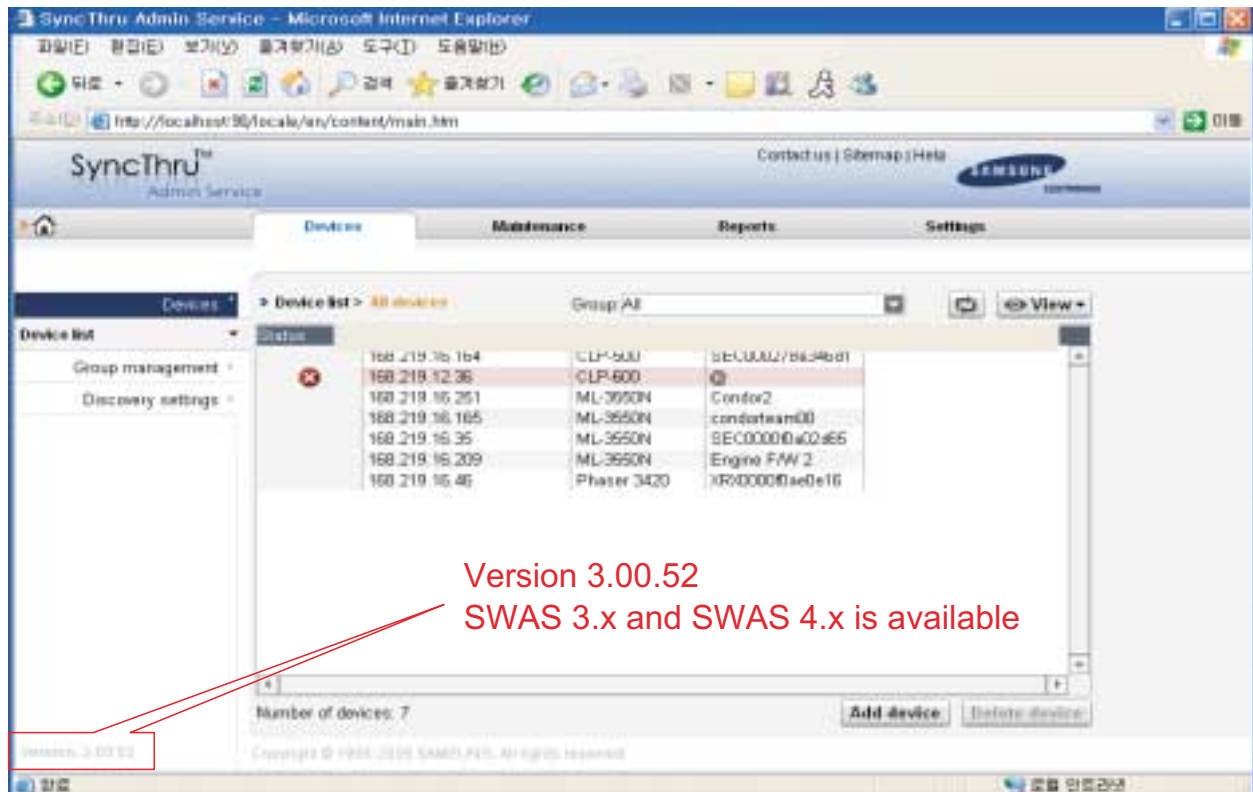
- Detecting device on the network
- Performing Maintenance operations
- Getting detailed reports and statistics on device events



11.5.1 SWAS Features

Version	Model	Remark
3.xx.xx	Kestrel (ML-3560), Dove (ML-3051ND), Falcon (ML-8800), Elbert (SCX-5530FN), DaVinci (CLP-600), DaVinci PDL (CLP-650), Iris (CLX-3160FN)	<ul style="list-style-type: none"> - Detecting device on the network - Performing Maintenance operations - Display general , Supply, Protocols, Status, Usage meters, Alert, Diagnostics information - Grouping and Managing devices - Setting of detection Protocol - Upgrading Firmware group of device - Reporting information of Alert and Consumables by HTML or Email
4.xx.xx	Oriole (ML-2570), Stork (ML-4551ND), Elbruz (SCX-6322DN), Whitney2 (SCX-4725)	<ul style="list-style-type: none"> - Discovery Status Checking - Set IP - Online Toner Ordering - SSL / User Authentication - IPv6 - SNMP V3 - 13 Languages (Hungarian, Brazilian Portuguese, Turkish)
Plug-ins	Jungfrau And upcoming model	<ul style="list-style-type: none"> • Plug-in will be released in the samsung download center • Plug-ins can be installed on the SyncThru4.0 (Add-on functions) - Restrict user permission and monitor actual usage information (Job Accounting Plug-in) - Copy configuration settings into multiple devices (Device Cloning Plug-in) - Add, delete, copy and move files between devices (File Storage Plug-in) - Discovery and monitor about non- network printers (Local Device Discovery Plug-in) - Get the latest driver and management driver files (Driver Management Plug-in) - Pre-configure and install drivers in the remote hosts (Driver Management Plug-in)

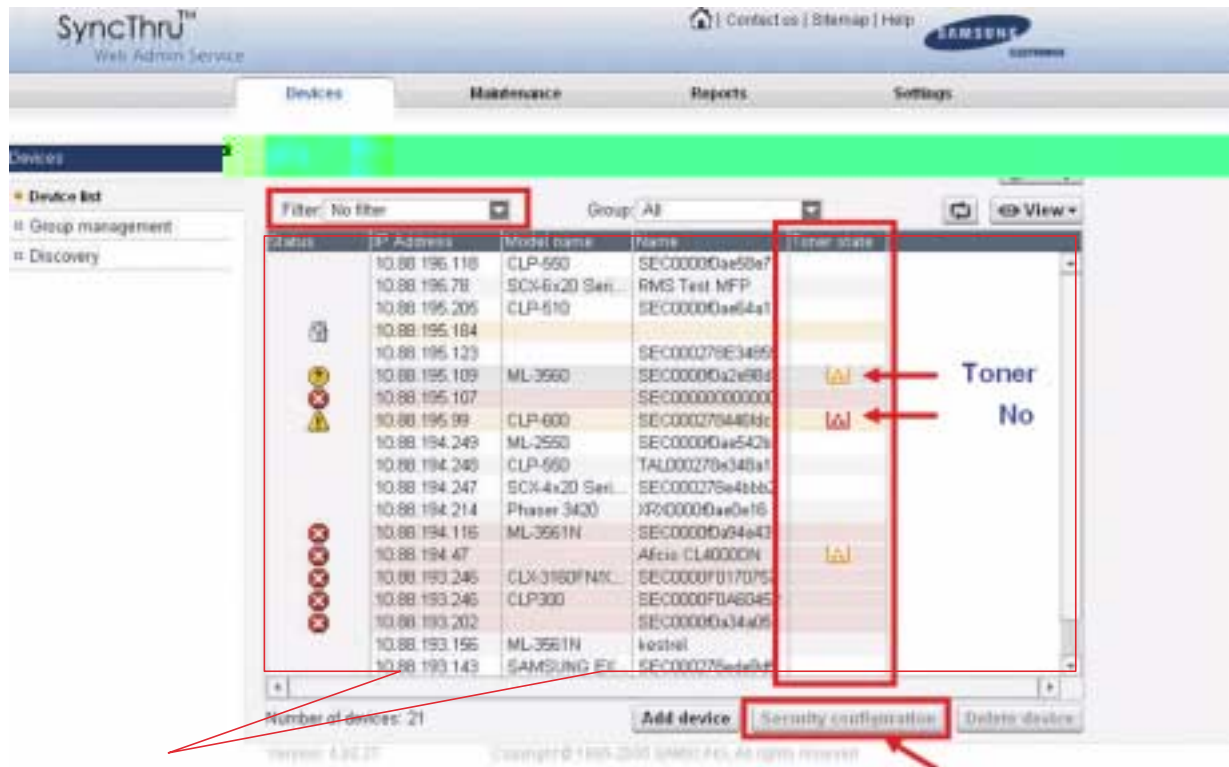
11.5.2 Version Identifier



Version 3.00.52
SWAS 3.x and SWAS 4.x is available

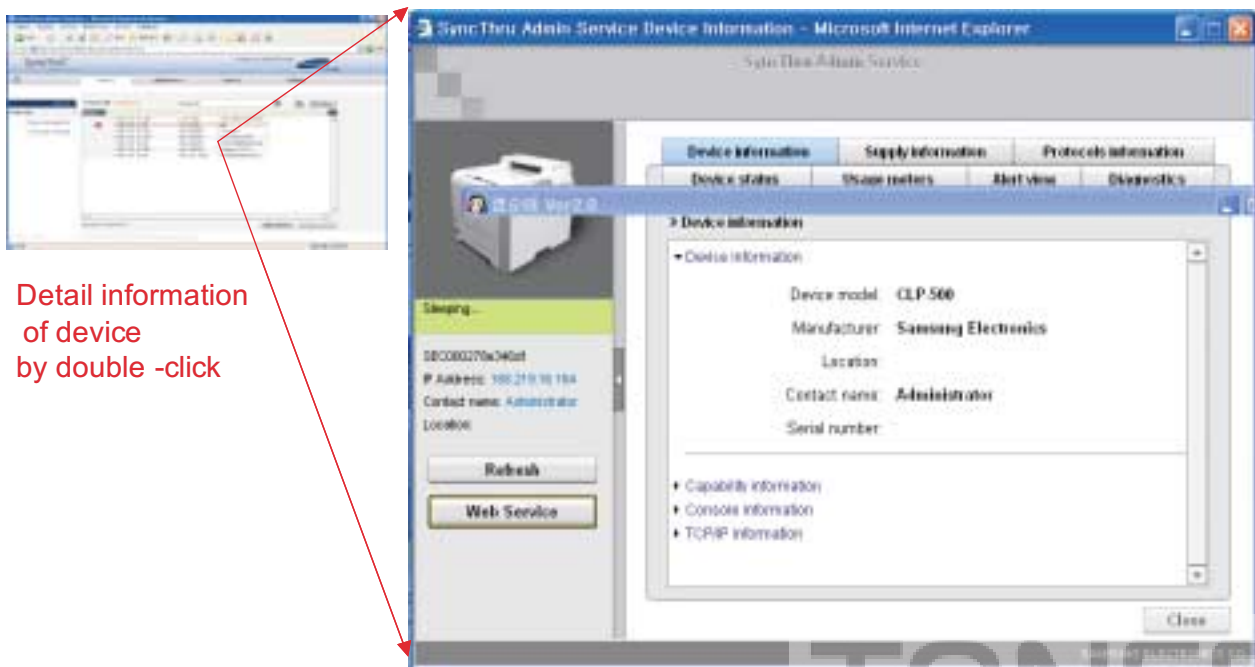
11.5.3 SWAS Device Menu

- Detecting and Displaying devices on the network



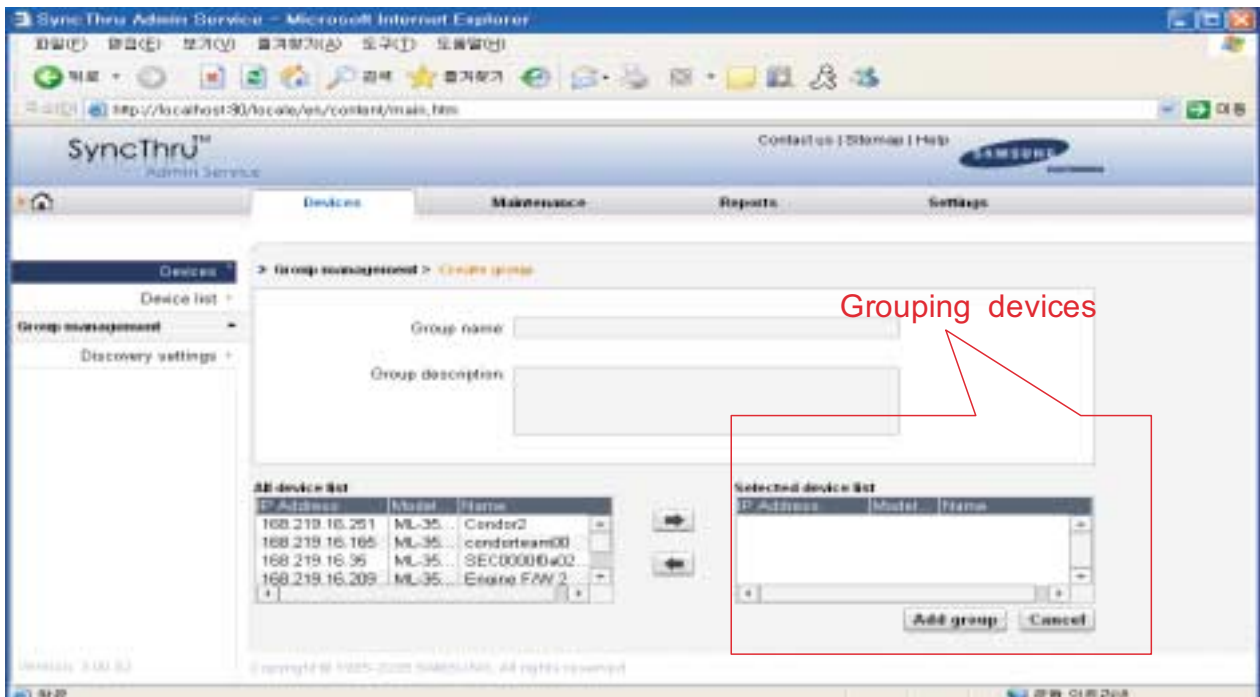
Device information in the network

- Display general , Supply, Protocols, Status, Usage meters, Alert, Diagnostics information

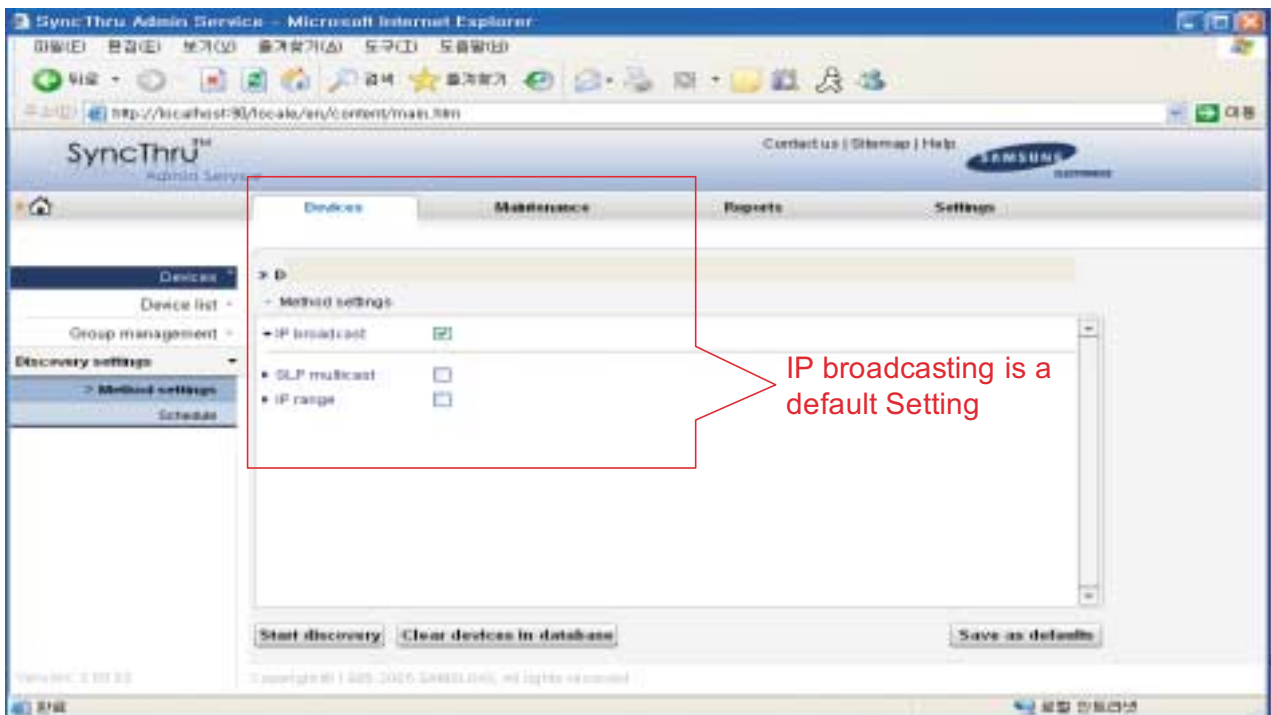


Detail information of device by double -click

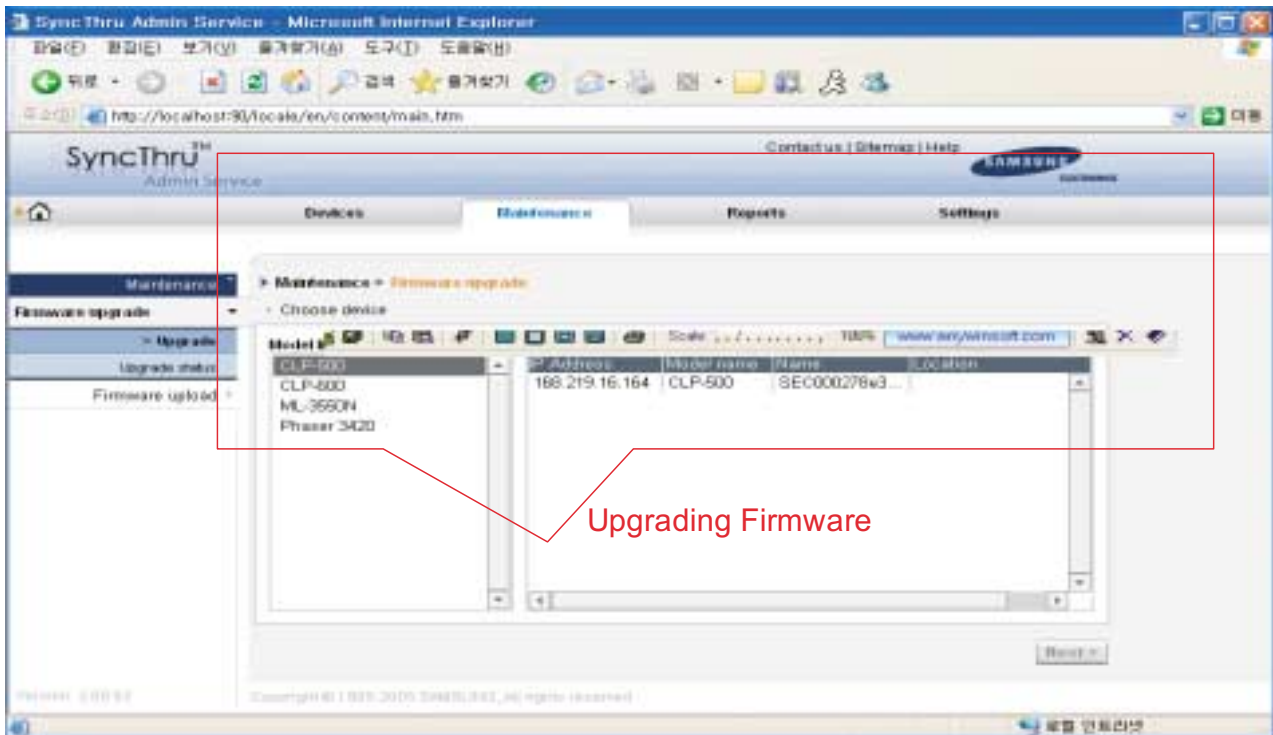
• Grouping and Managing devices



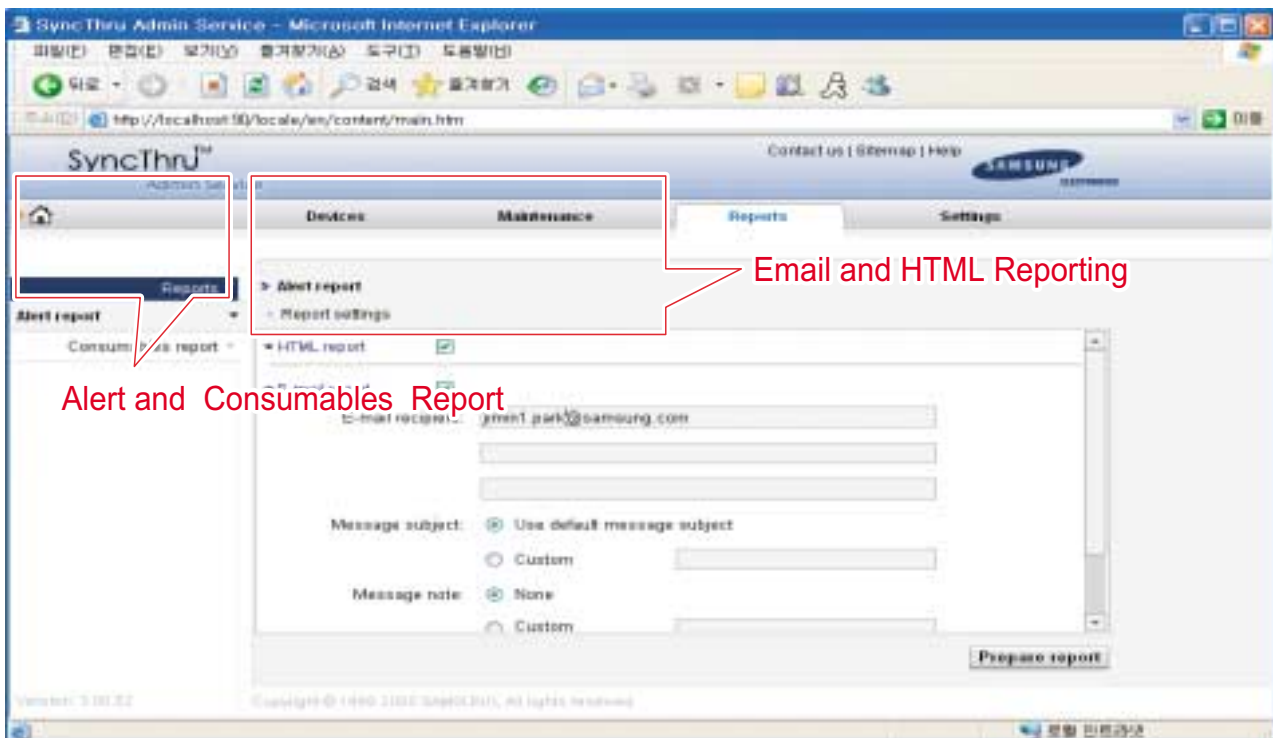
• Setting of detection Protocol



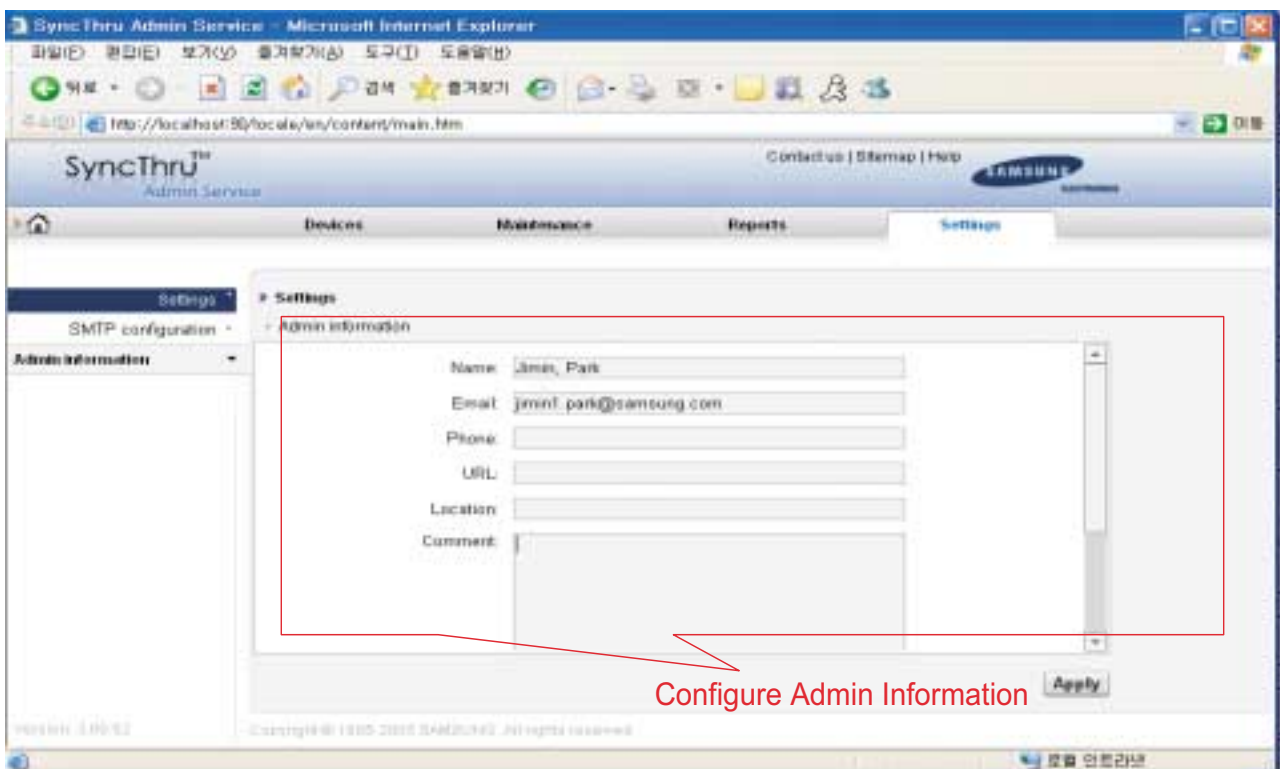
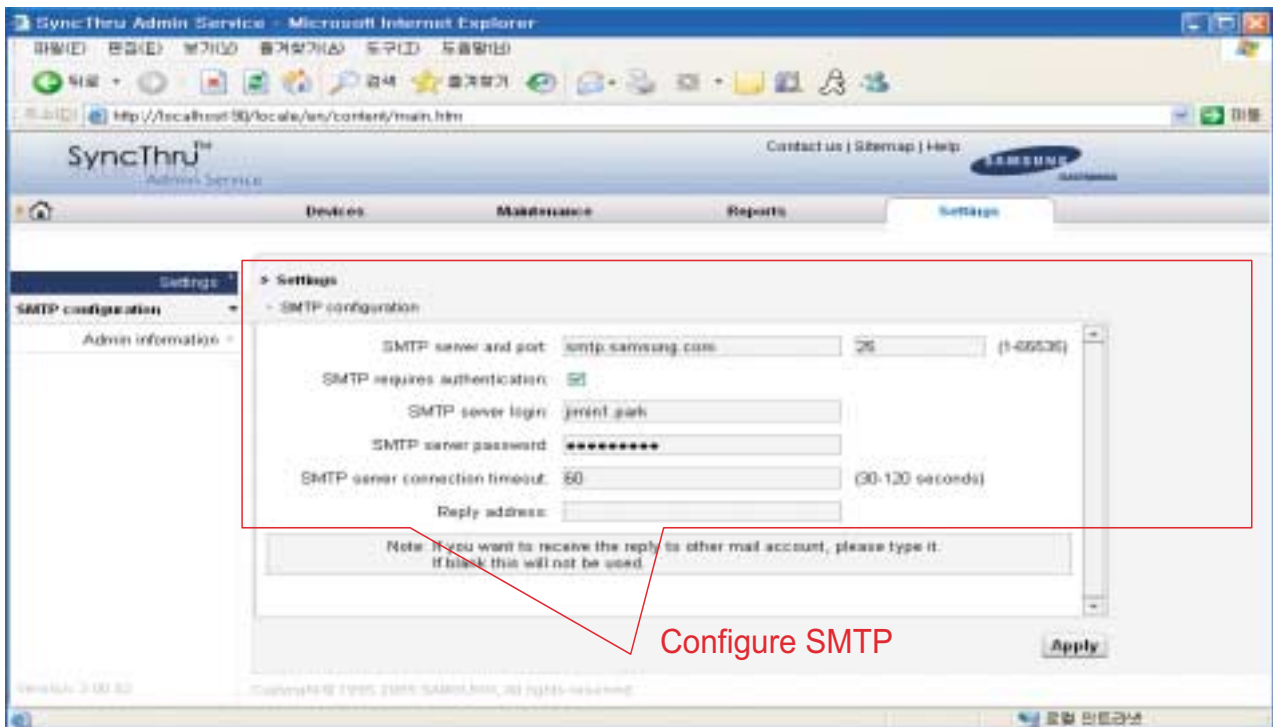
- Upgrading Firmware to multiple devices



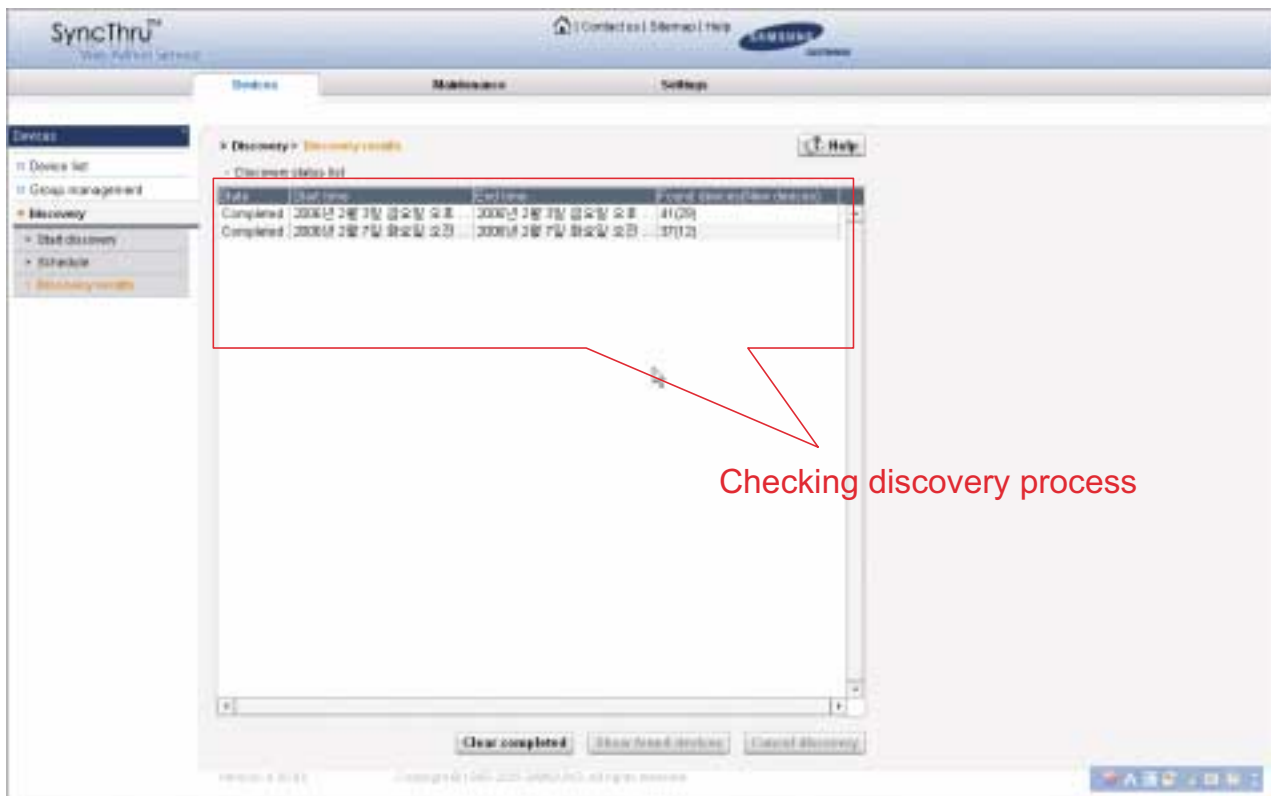
- Reporting information of Alert and Consumables by HTML or Email



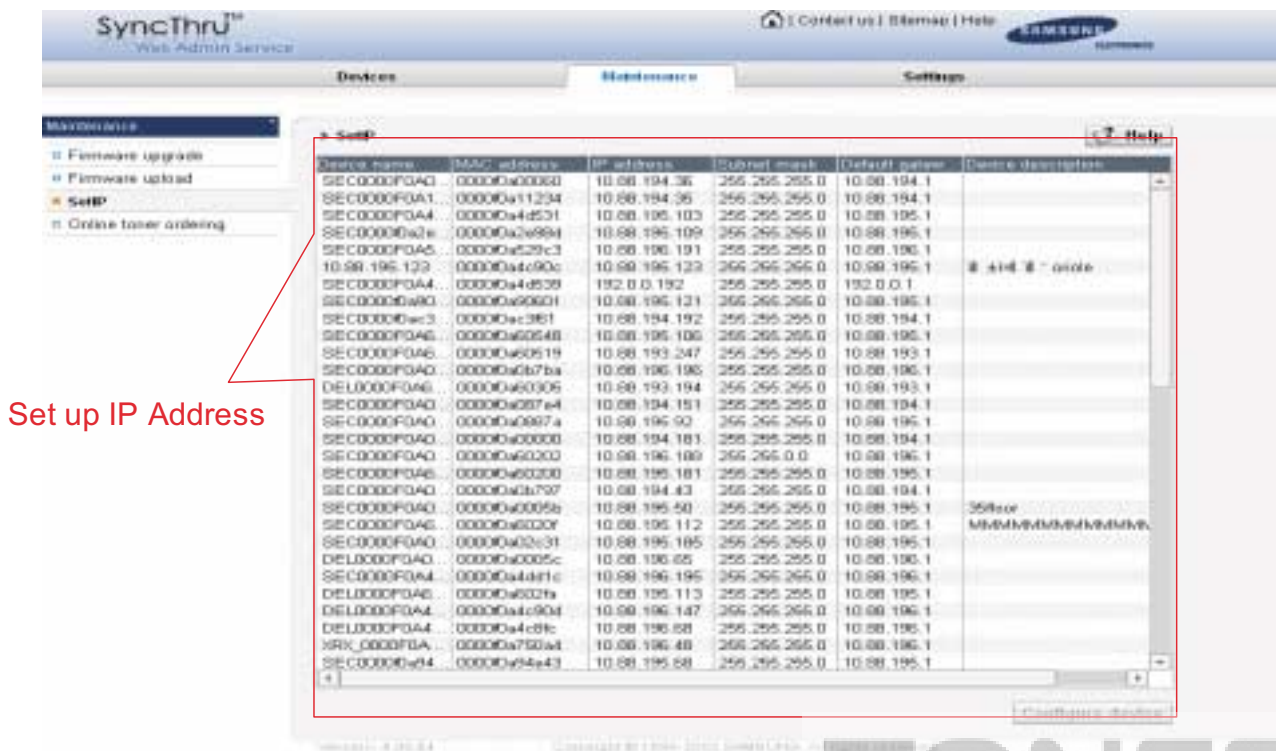
· Configure SMTP Server and Admin Information



• Discovery results



• Set up IP



• Online toner ordering

SyncThru™
Web Admin Service

Home | Contact us | Sitemap | Help

SAMSUNG ELECTRONICS

Devices Maintenance Reports Settings

Maintenance

- Firmware upgrade
- Firmware upload
- Service request
- SetIP
- Online toner ordering**

> Online toner ordering

? Help

Toner low

☐ Show devices with no cartridge only

Toner status	Name	IP Address	Physical address	Location	Model name
	SEC00000a2e98d	10.88.195.109	00:00:F0:A2:E9...		ML-3560
	SEC000278446fd	10.88.195.99	00:02:78:44:6F...		CLP-600

No cartridge

Toner ordering site Order toner

Version: 4.00.27 Copyright © 1995-2005 SAMSUNG. All rights reserved.

You can set the site for toner order.

This button opens the page set in the toner ordering site.

• Authentication settings

If SSL is not enabled and configured then it's not possible to enable authentication. The link leads to SSL configuration.

Authentication can be enabled with the button. Authentication works only when SSL is enabled.

Type	User name
Domain	RND/Roman
Local	Sergey
Local	Misha
Local	Dima
Domain	RND/Dima
Domain	RND/Artur

Modify dialog box fields:

- New password:
- Confirm password:
- Buttons: OK, Cancel

Buttons at the bottom: Add, Change password, Delete

User list shows user accounts both from Domain and Local. The method of authentication is used according the type of user profile (Local or Domain).

Change password for Local users only.

11.6 Samsung SyncThru Web Service: General Information (MFP)

General Information

- Machine Status
- Supplies Status
- Billing/Counters
- Network Information
- Firmware Version
- Print Information

The screenshot displays the Samsung SyncThru Web Service interface. The top navigation bar includes links for 'Contact Us' and 'Site Map', along with the Samsung logo. Below this is a main menu with options: Home, Information, Machine Settings, Network Settings, Maintenance, and Support. The 'Information' section is active, showing a sidebar with links to Machine Status, Supplies Status, Billing/Counters, Network Information, Firmware Version, and Print Information. The main content area shows the 'Supplies Status' section with 'Black Toner' and 'Drum Cartridge' both marked as 'Ready'. Below this is the 'Paper Sources' section showing 'Copy Tray' as 'Tray 1'. The 'Input Trays' section shows 'Tray1' as 'Ready' and 'MP Tray' as 'Empty'. A 'Transferring Tray1 Paper Mismatch' error message is displayed with a printer icon. To the right, a box contains printer details: 'SCX-6x45 Series', 'Name : SEC0000AA90044F', 'IP Address : 10.88.195.148', 'Contact : Administrator', and 'Location :'. A 'Refresh' button is at the bottom of this box. The footer of the interface states 'Copyrights © 1995-2008 SAMSUNG. All rights reserved.'

11.7 Samsung SyncThru Web Service: Machine Settings (MFP)

Machine Settings

- System Setup
- Copy Setup
- User Authentication Setup
- E-mail Setup
- E-mail Notification Setup
- Reset
- ...

The screenshot shows the Samsung SyncThru Web Service interface. The top navigation bar includes links for Home, Information, Machine Settings (selected), Network Settings, Maintenance, and Support. The left sidebar contains a tree view of settings: Machine Settings (selected), System Setup, Machine Setup, Paper Setup (selected), Copy Setup, User Authentication, E-mail Setup, FTP Setup, SMB Setup, Scan Setup, PCL, PS, E-mail Notification Setup, LDAP Server Setup, and Reset. Below this is a 'Select Language' dropdown set to 'English'.

The main content area is titled '> System Setup > Paper Setup >>'. It contains three sections:

- Paper Size:**
 - Tray 1 :
 - MP Tray :
- Paper Type:**
 - Tray 1 :
 - MP Tray :
- Paper Source:**
 - Copy Tray :

At the bottom of the settings area are 'Apply' and 'Undo' buttons. The footer of the page reads 'Copyrights © 1995-2008 SAMSUNG. All rights reserved.'

11.8 Samsung SyncThru Web Service: Network Settings

Network Settings

- General
- NetWare
- TCP/IP
- SLP
- SNMP
- Raw TCP/IP, LPR, IPP
- IP Filtering
- Wireless
- UPnP
- Reset

SyncThru Web Service - Microsoft Internet Explorer

Address: <http://168.219.12.33/>

Contact us | Site Map

SAMSUNG ELECTRONICS

Home Information Machine Settings **Network Settings** Maintenance Support

Network Settings

General

EtherTalk

NetWare

TCP/IP

SLP

SNMP

Raw TCP/IP, LPR, IPP

IP Filtering

Wireless

UPnP

Reset

Select Language

English

> General >>

> General

Host Name : SEC000278446ee6

Location :

Contact : Administrator

> Ethernet

Speed Rate : Automatic

MAC Address : 00:02:78:44:6E:E6

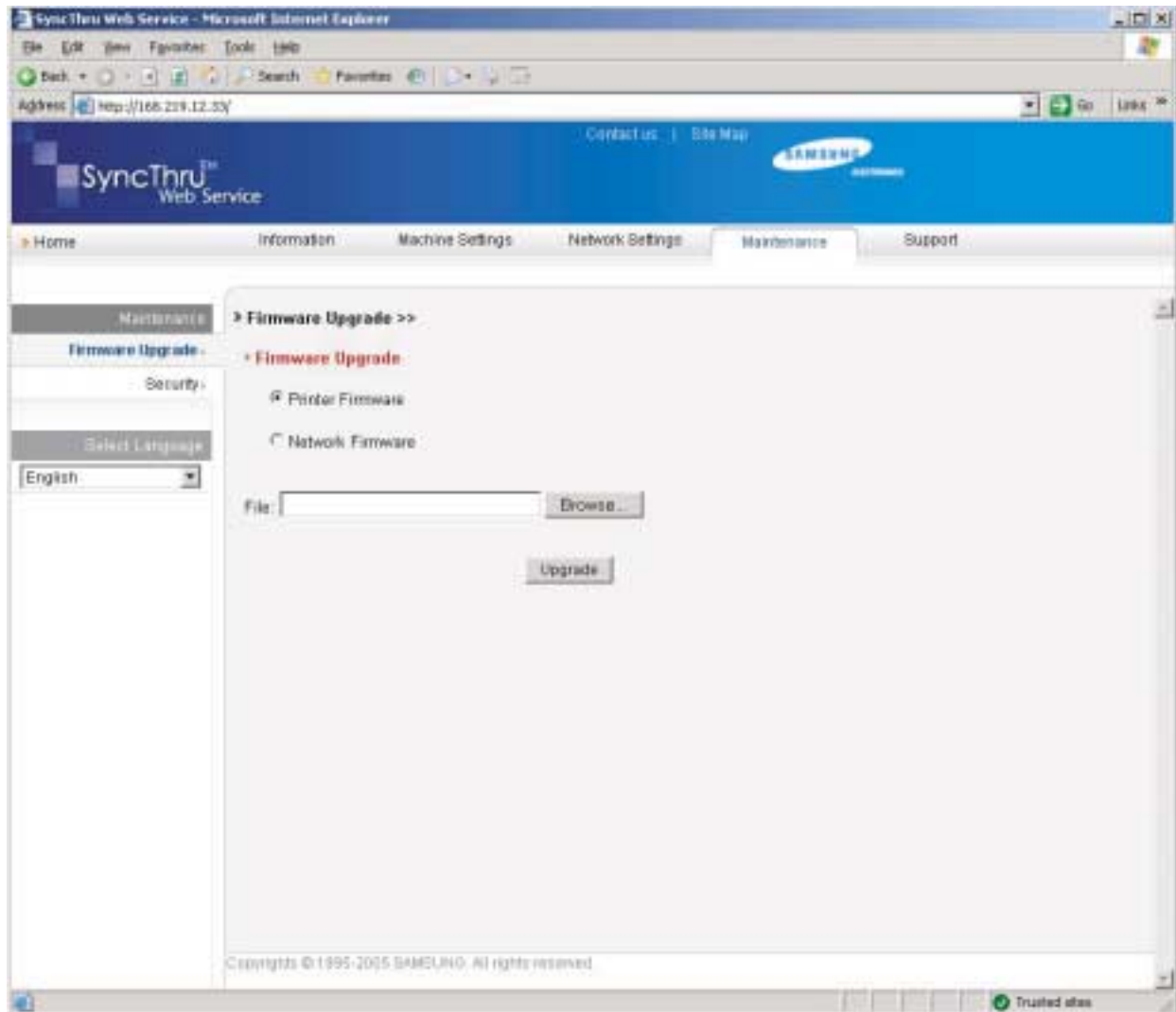
Apply Undo

Copyrights © 1995-2005 SAMSUNG. All rights reserved.

11.9 Samsung SyncThru Web Service: Maintenance

Maintenance

- Firmware Upgrade
- Security



11.10 Samsung SyncThru Web Service: Support

Support

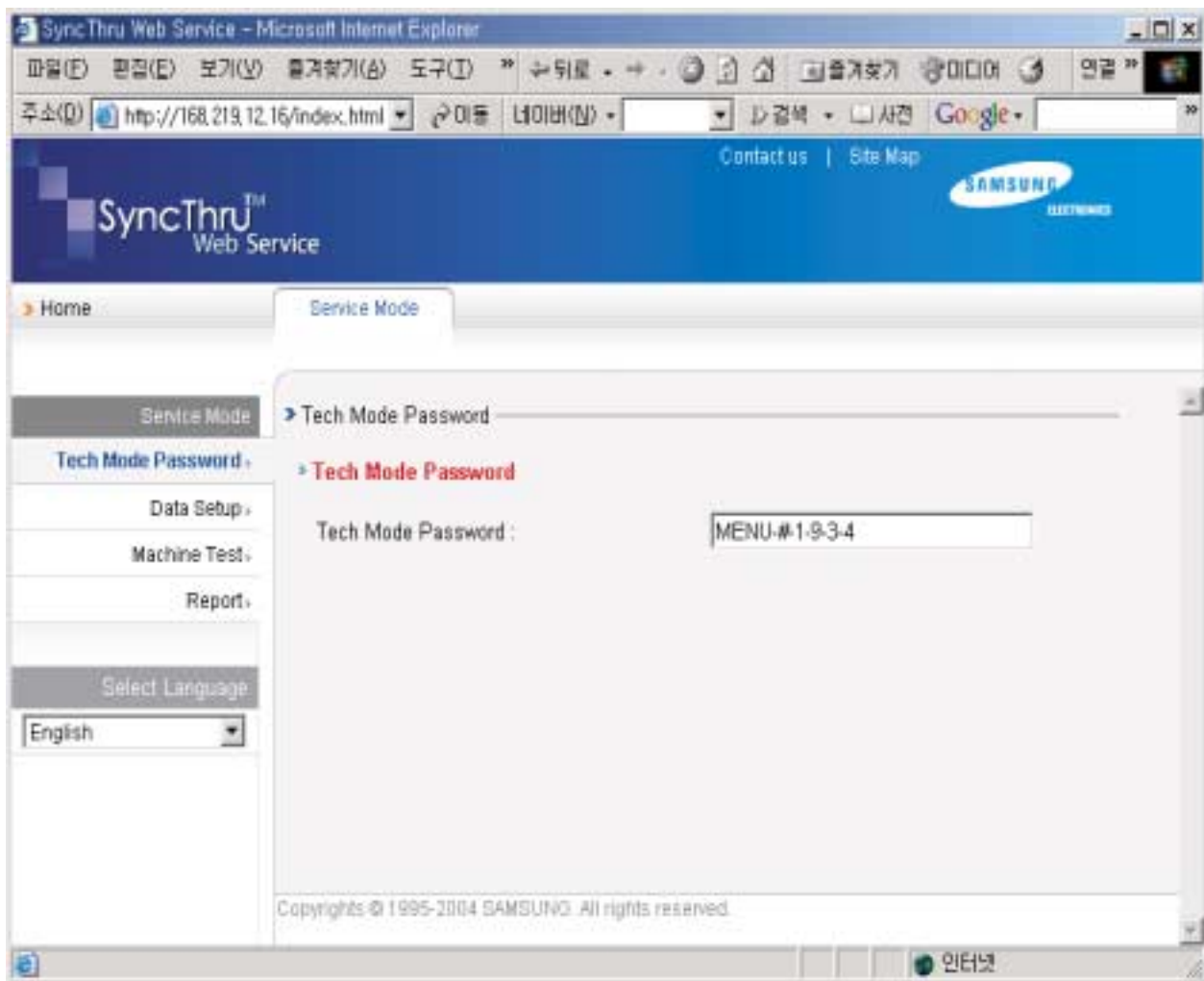
- Contact Information
- Link

The screenshot shows the Samsung SyncThru Web Service interface in a Microsoft Internet Explorer browser window. The address bar shows the URL <http://168.219.12.33/>. The page has a blue header with the SyncThru Web Service logo and a Samsung logo. A navigation bar includes links for Home, Information, Machine Settings, Network Settings, Maintenance, and Support. The Support section is active, showing a sidebar with 'Support', 'Contact Information', 'Link', and 'Select Language' (set to English). The main content area is titled 'Contact Information >>' and contains two sections: 'System Administrator' and 'Samsung Support'. The 'System Administrator' section has input fields for Name, Phone Number, Location, and E-mail Address. The 'Samsung Support' section has input fields for Customer Support Phone Number, Services Phone Number, and Supply Phone Number. At the bottom of the form are 'Apply' and 'Undo' buttons. The footer of the page states 'Copyright © 1995-2005 SAMSUNG. All rights reserved.'

11.11 Samsung SyncThru Web Service: Service (MFP)

Service

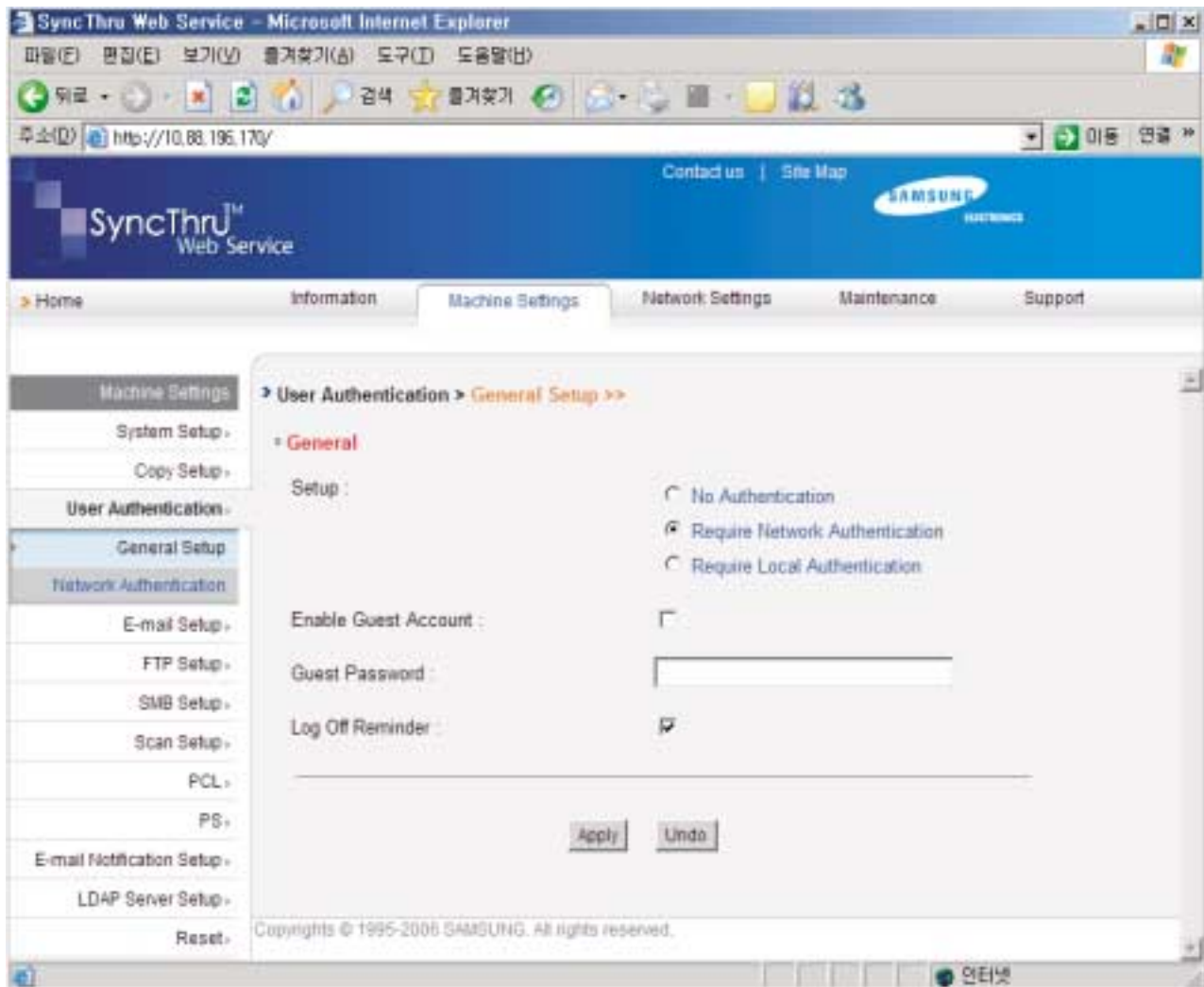
- <http://NPC-IP-Address/service.html>
- Tech Mode Password
- Data Setup
- Machine Test
- Report



11.12 Samsung SyncThru Web Service: Authentication

General Setup

- Setup
- Enable Guest Account
- General Password
- Log Off Reminder



11.13 Samsung SyncThru Web Service: Authentication (Local Authentication)

Local Authentication

- Index
- User Name
- Auth ID
- Password
- E-mail Address
- Phone Number

The screenshot shows the Samsung SyncThru Web Service interface in a web browser. The address bar displays 'http://10.00.196.170/'. The page has a blue header with the 'SyncThru Web Service' logo and navigation links like 'Contact us' and 'Site Map'. Below the header is a menu bar with 'Home', 'Information', 'Machine Settings', 'Network Settings', 'Maintenance', and 'Support'. The 'Machine Settings' tab is active, and the 'Local Authentication' option is selected in the left sidebar. The main content area is titled '> User List Setup >>' and contains an 'Add User List' section. This section includes input fields for 'Index' (set to 1), 'User Name' (bjyang), 'Auth ID' (auth1), 'Password' (masked with dots), and 'Retype password' (masked with dots). There is a checkbox for 'Select to save new password.' which is checked. Below these are fields for 'E-mail Address' (bjay@naver.com) and 'Phone Number' (011-222-4444). At the bottom of the form are 'Apply' and 'Undo' buttons.

11.14 Samsung SyncThru Web Service: Authentication (Network Authentication)

Network Authentication (Kerberos Setup)

- Default Realm
- IP address or Host Name
- Kerberos Server and Port
- Backup Realm
- IP address or Host Name
- Kerberos Backup Server and Port

The screenshot shows the Samsung SyncThru Web Service interface in a web browser. The address bar displays 'http://10.88.196.170/'. The page has a blue header with 'SyncThru Web Service' and 'SAMSUNG ELECTRONICS' logos. A navigation bar includes links for Home, Information, Machine Settings, Network Settings, Maintenance, and Support. The 'Machine Settings' tab is active, and the 'Network Authentication' sub-tab is selected. The main content area is titled '> Authentication > Network Authentication >>'. Under the 'General' section, 'Authentication Type' is set to 'Kerberos (Windows ADS)'. The 'Required Information' section includes fields for 'Default Realm' (captive), 'IP Address or Host Name' (selected as IP Address), 'Kerberos Server and Port' (10.88.194.128 : 88), and 'Additional Information' section includes 'Backup Realm' (fds), 'IP Address or Host Name' (selected as IP Address), and 'Kerberos Backup Server and Port' (1.1.1.1 : 88). There are 'Apply' and 'Undo' buttons at the bottom. A sidebar on the left lists various setup options like System Setup, Copy Setup, User Authentication, General Setup, Network Authentication, E-mail Setup, FTP Setup, SMB Setup, Scan Setup, PCL, PS, E-mail Notification Setup, LDAP Server Setup, and Reset. A 'Select Language' dropdown is set to 'English'.

Network Authentication (SMB Setup)

- Default Domain
- IP address or Host Name
- SMB Server and Port
- Backup Domain
- IP address or Host Name
- SMB Backup Server and Port

SyncThru™ Web Service

Contact us | Site Map

SAMSUNG ELECTRONICS

Home Information Machine Settings Network Settings Maintenance Support

Machine Settings

System Setup

Copy Setup

User Authentication

General Setup

Network Authentication

E-mail Setup

FTP Setup

SMB Setup

Scan Setup

PCL

PS

E-mail Notification Setup

LDAP Server Setup

Reset

Select Language

English

Authentication > Network Authentication >>

General

Authentication Type:

☐ Kerberos (Unix, Linux)

☐ Kerberos (Windows ADS)

☐ SMB (Windows NT 4)

☒ SMB (Windows ADS)

☐ LDAP

Required Information

Default Domain: CORP

IP Address or Host Name: ☒ IP Address ☐ Host Name

SMB Server and Port: 10.88.195.117 : 139

Additional Information

Backup Domain: DM

Name or IP Address: ☒ IP Address ☐ Host Name

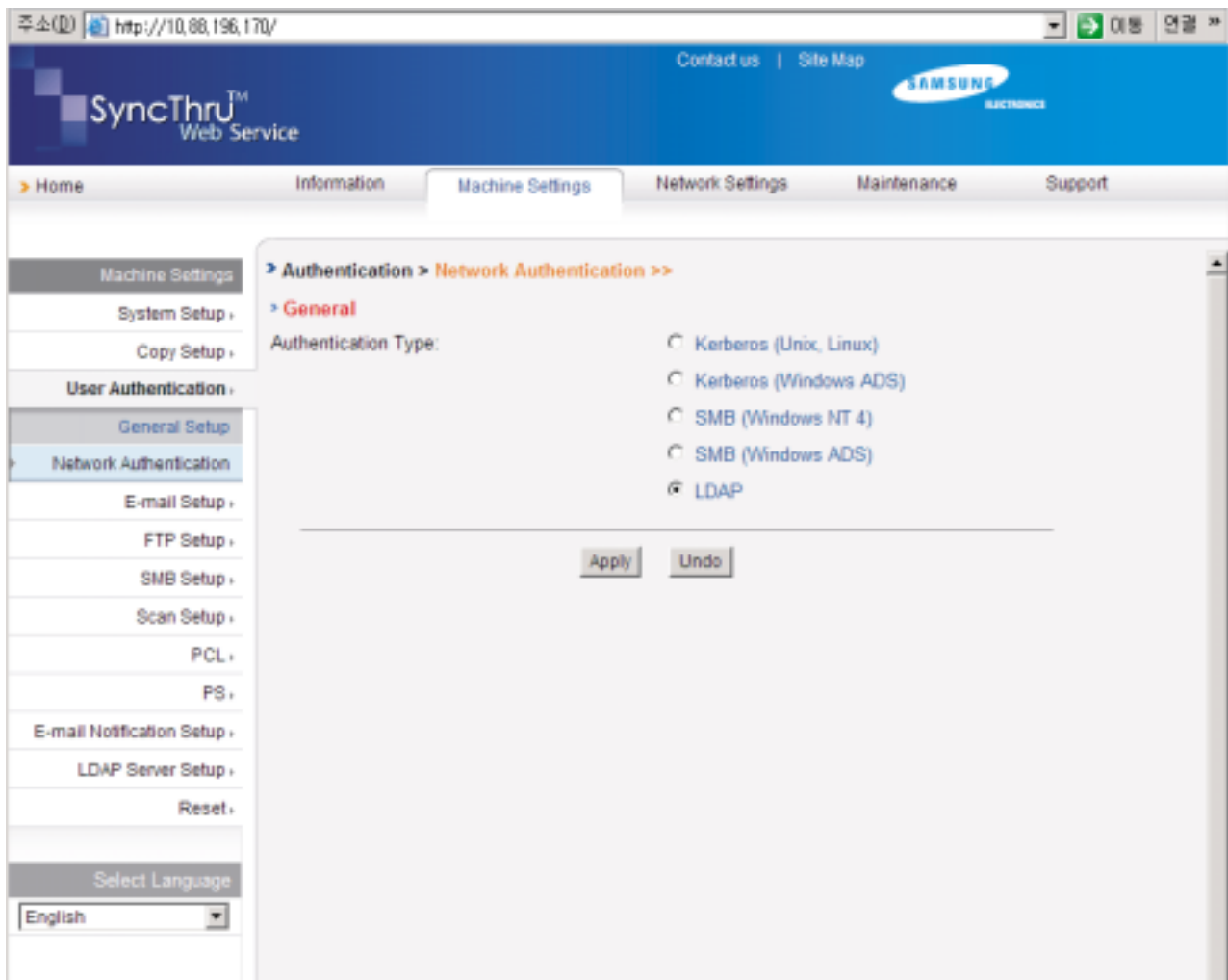
SMB Backup Server and Port: 10.88.195.117 : 139

Alternates...

Apply Undo

Network Authentication (LDAP Setup)

- There is no setup of LDAP Server
 - Server configuration of LDAP Server item is used to Auth Login



11.15 Samsung SyncThru Web Service: LDAP Server Setup

LDAP Server Setup_1

- IP address or Host Name
- LDAP Server and Port
- Search Root Directory
- Authentication Method
- Match User's Login ID to the Following LDAP attribute:

➤ E-mail Setup > LDAP Server Setup >>

• LDAP Server

IP Address or Host Name : ☒ IP Address
☐ Host Name

Note: If Host Name is selected, the DNS Server Address should be mentioned in TCP/IP settings page.

LDAP Server and Port : (1-65535)

• Optional Information

Search Root Directory :

Authentication method : ☐ Anonymous
☒ Simple

Match User's Login ID to the following LDAP attribute :

Append Root to Base DN: ☒ Enable

Login Name :

Password :

Maximum Number of Search Results : (0, 5~100)

Search Timeout : (0, 5~100) second(s)

LDAP Referral : ☐

LDAP Server Setup_2

- Append Root to Base DN
- Login Name
- Password
- Maximum Number of Search Result
- Search Timeout
- LDAP Referral

» E-mail Setup » LDAP Server Setup »

• LDAP Server

IP Address or Host Name : ☒ IP Address
☐ Host Name

Note: If Host Name is selected, the DNS Server Address should be mentioned in TCP/IP settings page.

LDAP Server and Port : (1-65535)

• Optional Information

Search Root Directory :

Authentication method : ☐ Anonymous
☒ Simple

Match User's Login ID to the following LDAP attribute:

Append Root to Base DN: ☒ Enable

Login Name :

Password :

Maximum Number of Search Results : (0, 5~100)

Search Timeout : (0, 5~100) second(s)

LDAP Referral : ☐

LDAP Server Setup_3

- Search Name Order
- From: Field Security Options

Search Name Order

Search Name Order :

☐ Common Name

☒ Email Address

☐ Surname Given Name

From: Field Security Options

Perform LDAP query to Populate "From:" Field: ☒ Enable

Apply Undo

11.16 Samsung SetIP

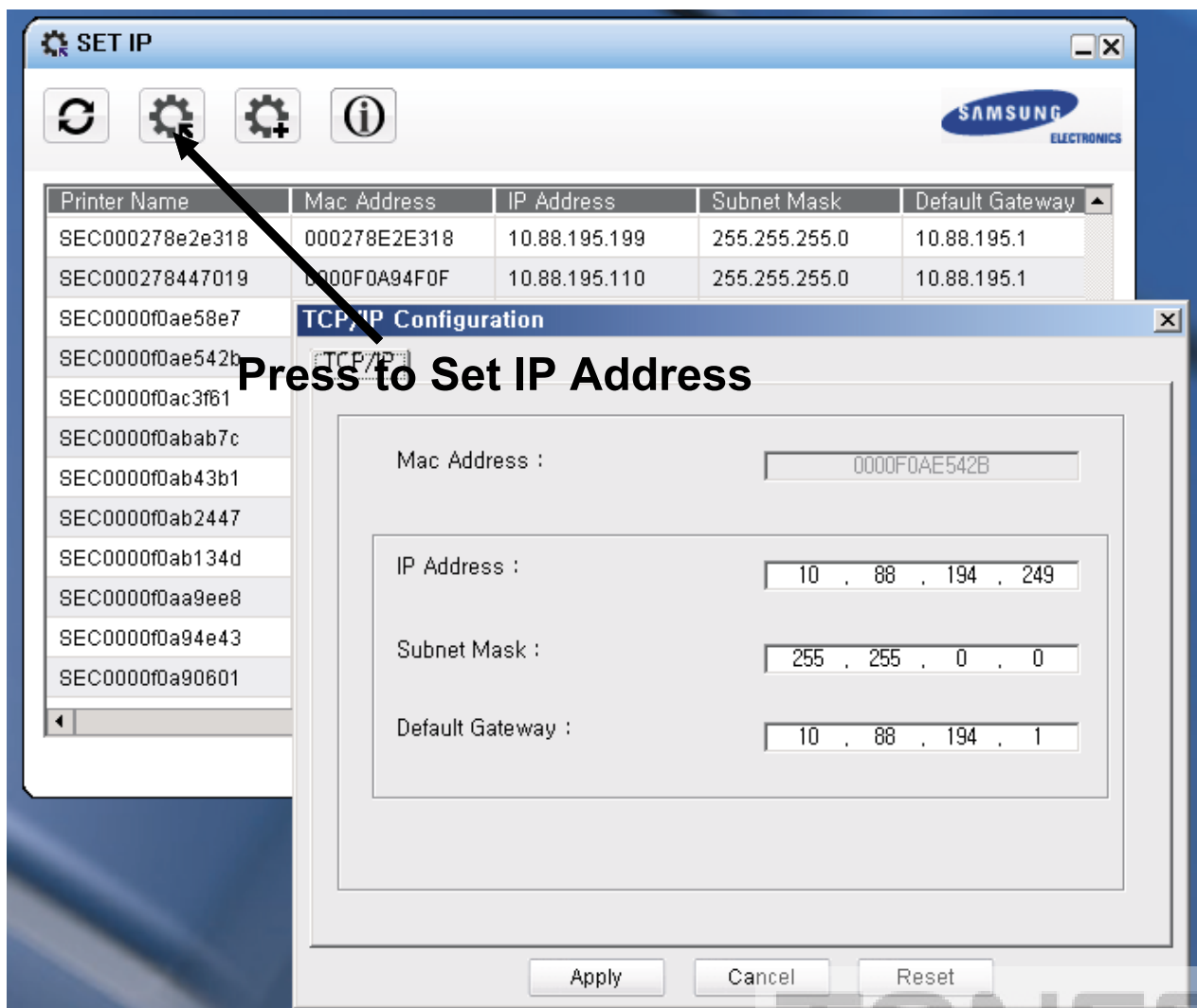
Configuration of IP Address

- Mostly used at first installation of network printer
- IP address setting with MAC address only
- MAC address is written on printer's backside

Samsung SetIP Utility

- Running on Microsoft Windows OS only
- Automatic detection of Samsung network printers
- Manual setting of undetected network printers

• Samsung SetIP: Application



11.17 TCP/IP Printing Protocol

Samsung Network Printer Port Printing

- TCP Port : 2000
- Port Monitor installation
- OS : Windows95/98/NT/ME

LPD (Line Printer Daemon) Printing

- TCP Port : 515
- OS : Unix, Linux, Windows OS (Win NT, 2K ~)

Microsoft Standard TCP/IP Printing

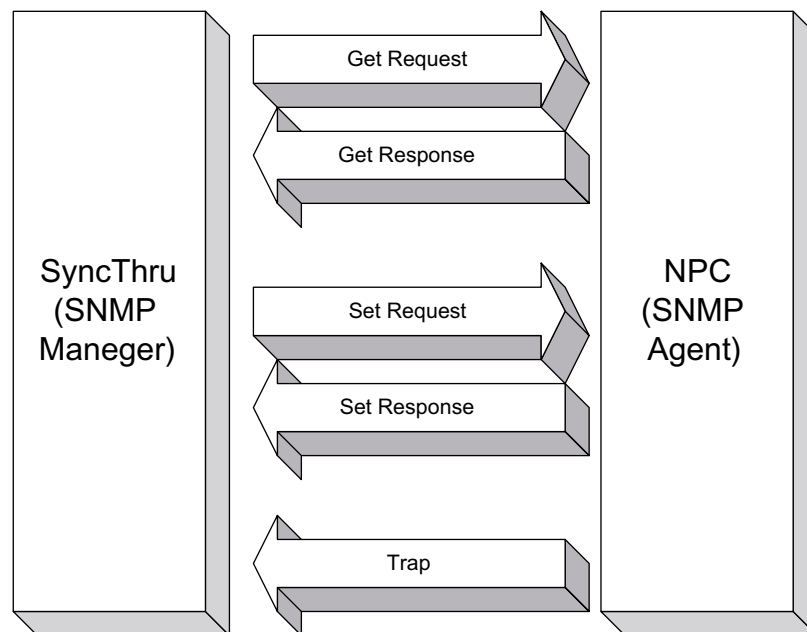
- TCP Port : 9100
- OS : Windows OS (Win 2K~)

IPP Printing Protocol

- TCP Port : 631
- OS : Windows OS (Win 2K~), Mac OS (MAC 10.3~)

11.18 Management Protocol

SNMP means Simple Network Management Protocol



11.19 HTTP

Web Server Protocol

- Used in Samsung SyncThru Web Admin Service
- Used in SyncThru Web Service (Embedded Web Server)
- Used in IPP 1.1 Protocol

11.20 Network models

Model Name	ML-3050 Series	ML-2570 Series	ML-4550 Series	CLP-300 Series	SCX-5x30 Series	SCX-6x22 Series	CLX-3160 Series	SCX-4725 Series	SCX-6x45 Series
Project Name	Dove	Oriole	Stork	Gogh	Elbert	Elburz	Iris	Whitney2	Jungfrau
Network Type	On-Board	On-Board	Phy-Board	On-Board	On-Board	Phy-Board	On-Board	On-Board	NPC3-H
Software Platform	Platform	Platform	Platform	Platform	Platform	Platform	Platform	Platform	Platform
NetWare	O	X	O	X	O	O	X	X	O
EtherTalk	O	O	O	X	O	O	X	O	O
Wireless	Opt	X	Opt	X	X	X	X	X	X
SWAS	3.0	4.0	4.0	3.0	3.0	4.0	3.0	4.0	4.05
Network Scan	X	X	X	X	O	O	O	X	O
Scan To Email	X	X	X	X	O	O	O	X	O
Scan To SMB	X	X	X	X	O	O	X	X	O
Scan To FTP	X	X	X	X	O	O	X	X	O
Network Authentication	X	X	X	X	X	X	X	X	O