

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

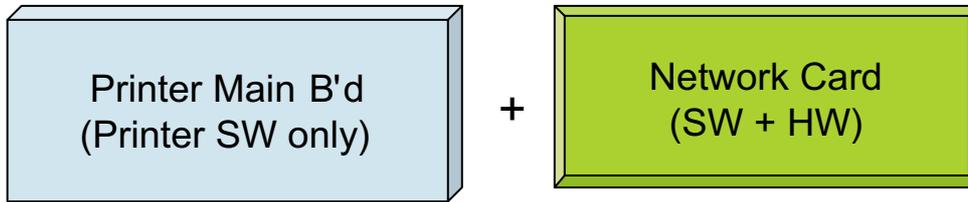
- ML-00NB, ML-00NC, ML-00NE, ML-00NF, CLP-N600A
: Optional internal wired network card for PRINTER
- ML-00LB, ML-00LC, ML-00LE, ML-00LF, CLP-N600B
: Optional internal wired/wireless network card for PRINTER
- ML-00NA
: Old optional internal wired network card
- SCX-00NB
: Optional internal wired network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

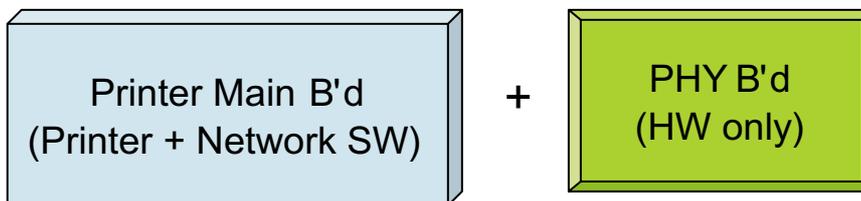
- ML-00LA: External wired/wireless network printer server
- ML-00ND: External wired network printer server

11.2 Printer Connection Method

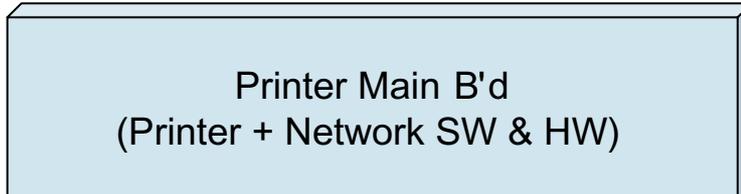
- Network Card Type

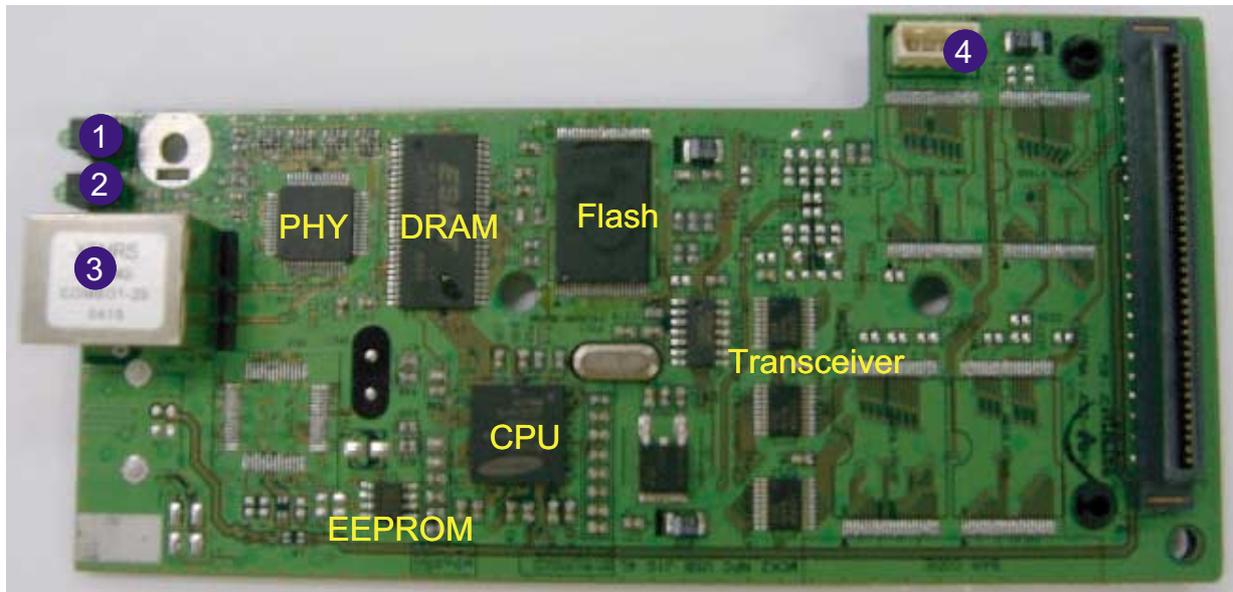


- PHY Board Type



- Network Printer on-board Type



- Network Card (SCX-6320NA/SEE)

1 Link LED

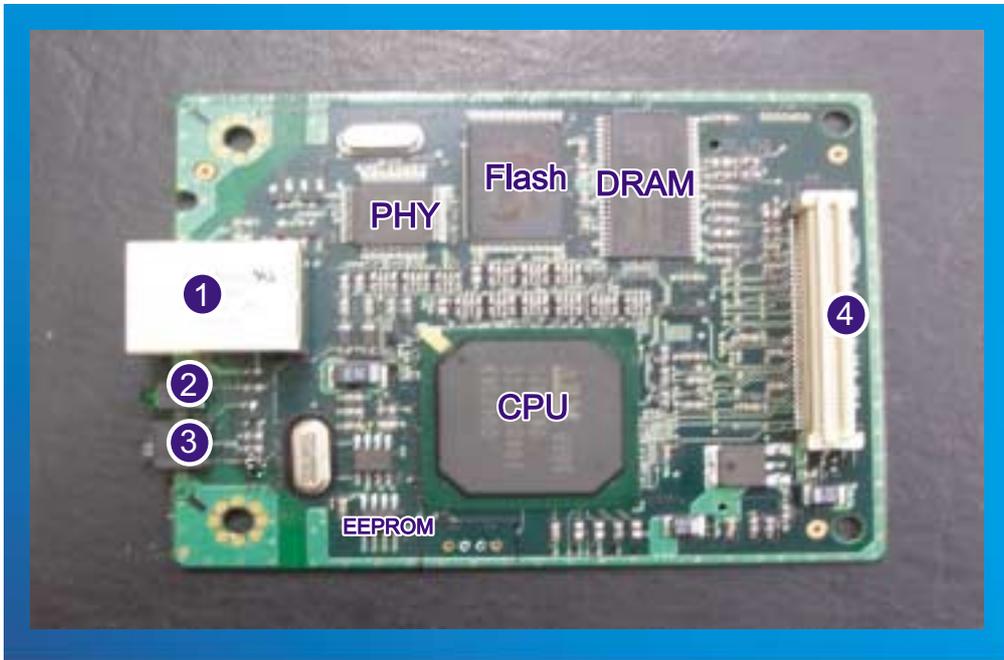
2 Activity LED

3 RJ-45 Modular Jack

4 Serial Interface for Debugging

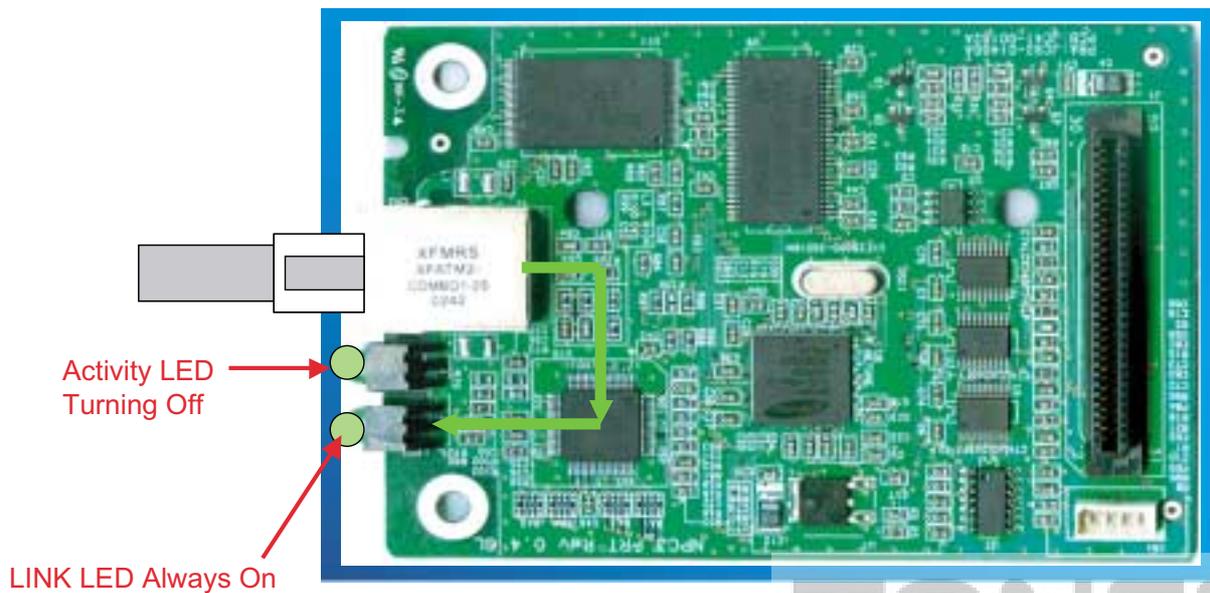
- Network Card (NPC3H)

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

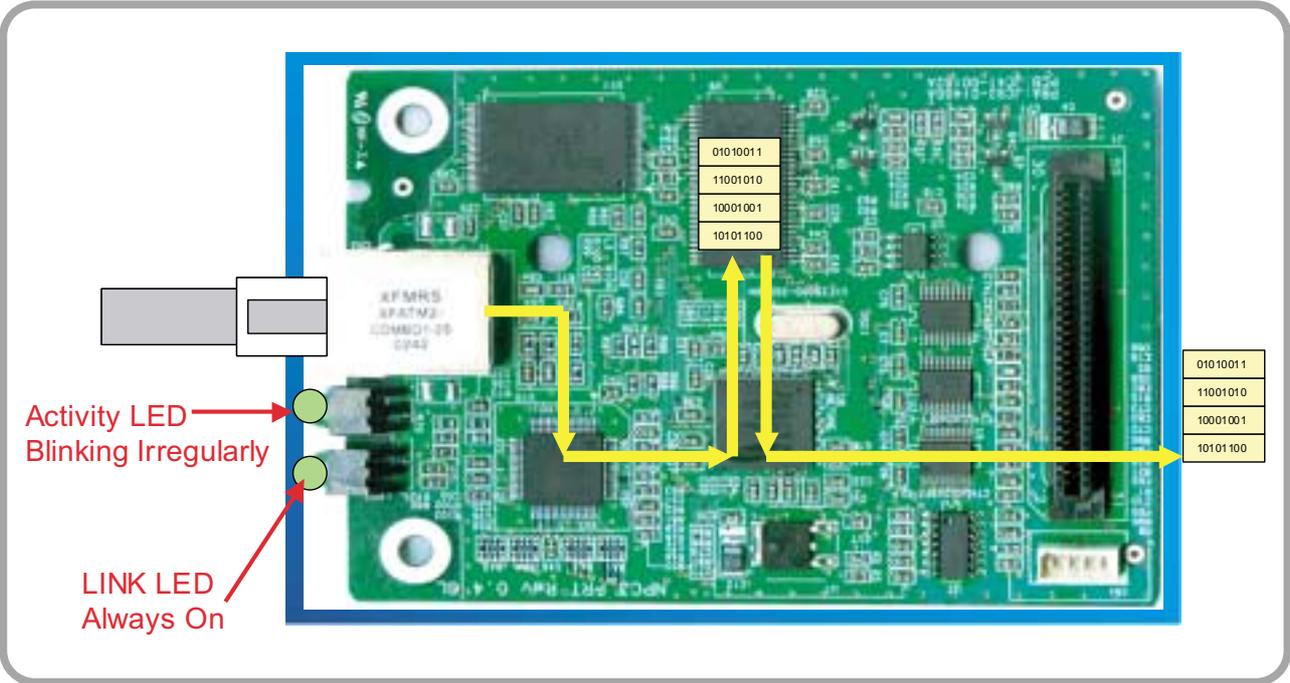


- | | |
|----------------------|-------------------------|
| ① RJ-45 Modular Jack | ③ Link LED |
| ② Activity LED | ④ Printer I/F Connector |

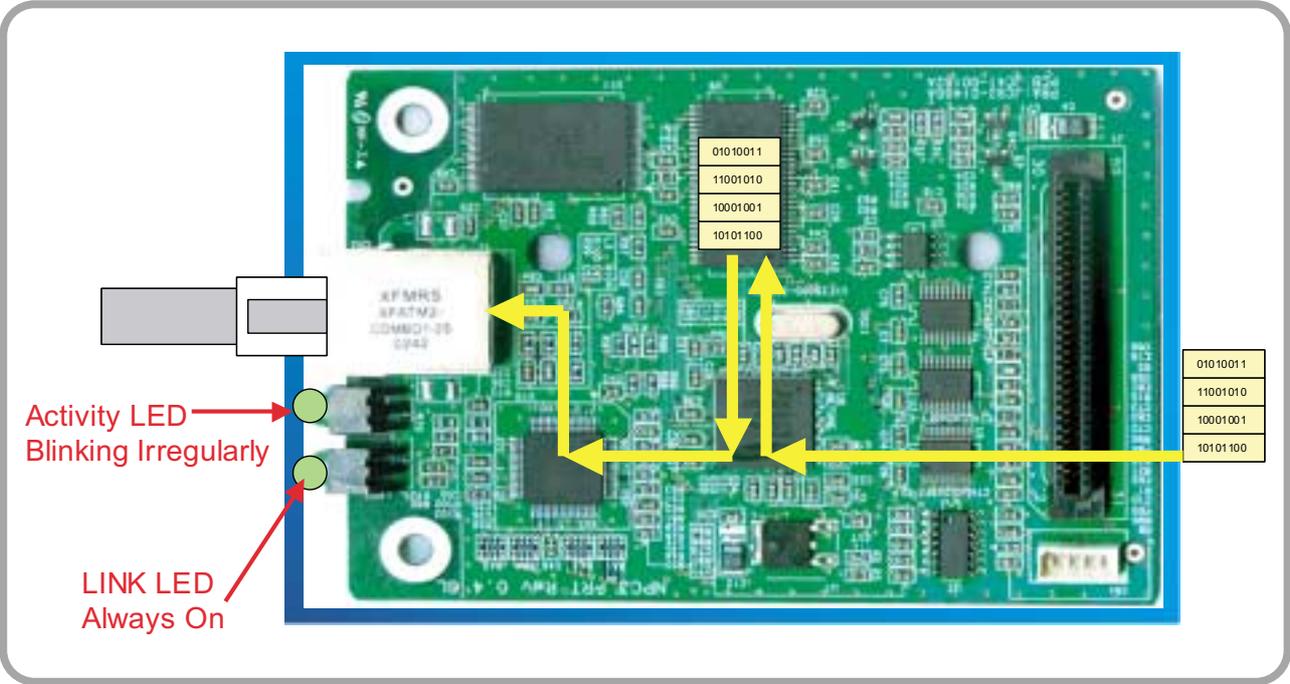
- Link Sequence



- Network Data Reception



- Network Data Transmission



11.3 Network Card Firmware

Firmware Components

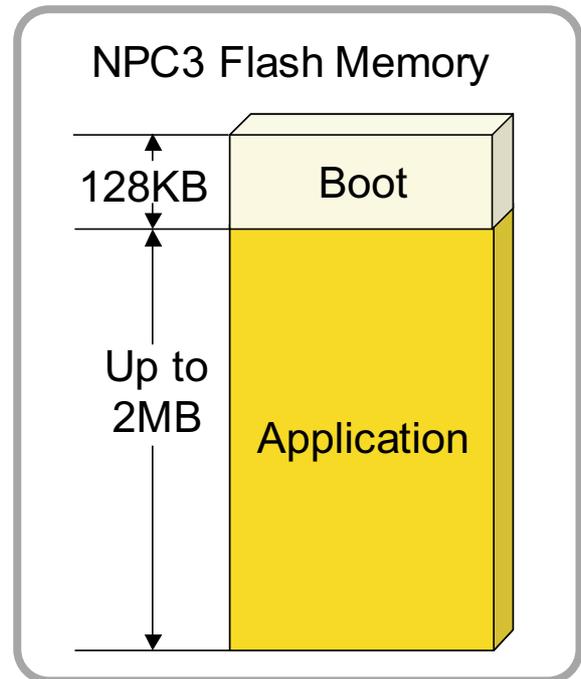
- Boot code ROM
- Application code ROM

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

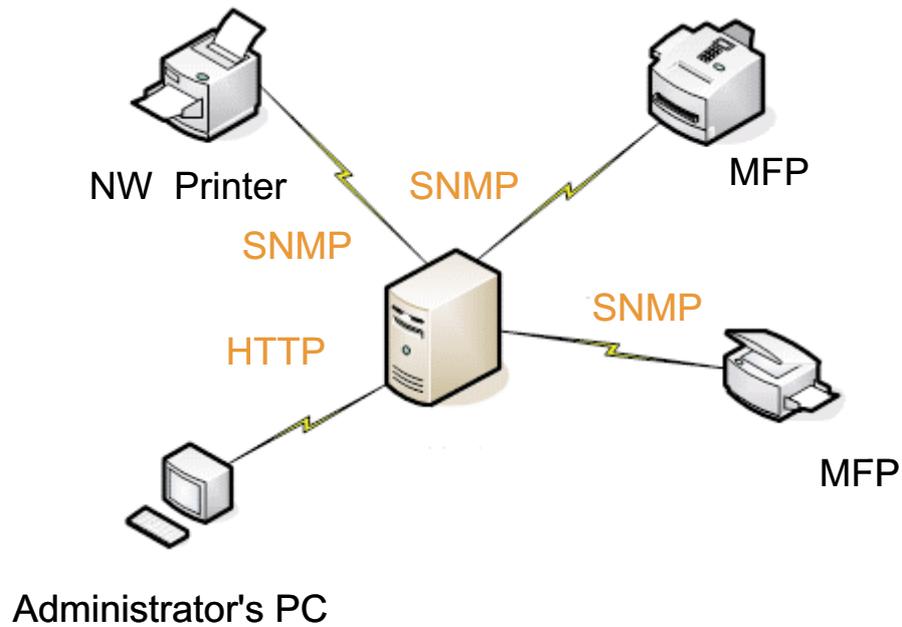
- To upgrade network card firmware with latest version
- Use TFTP Protocol (Network Card Type Only)
- Use HTTP Protocol (Embedded Web Server, SWS, SWAS)

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

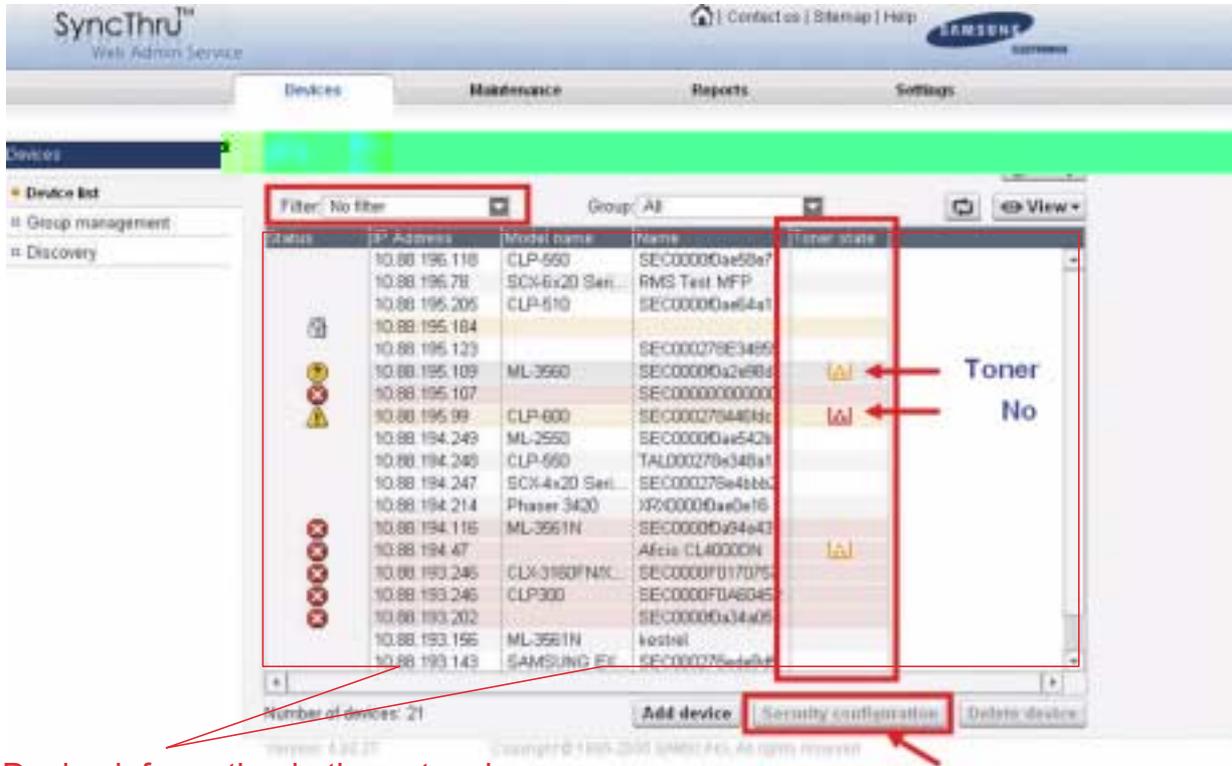
The screenshot shows the SyncThru Admin Service web interface. The main content area displays a table of devices with the following data:

IP Address	Model	Serial Number
168.219.16.164	CLP-50U	0E000000a00e01
168.219.16.165	CLP-600	Confor2
168.219.16.251	ML-3550N	confor2eam00
168.219.16.165	ML-3550N	EE000000a00e05
168.219.16.35	ML-3550N	Engine FW 2
168.219.16.209	ML-3550N	Engine FW 2
168.219.16.46	Phaser 3420	XR000000a00e16

At the bottom left of the interface, a red box highlights the version number '3.00.52'. A red arrow points from the text 'Version 3.00.52 SWAS 3.x and SWAS 4.x is available' to this box.

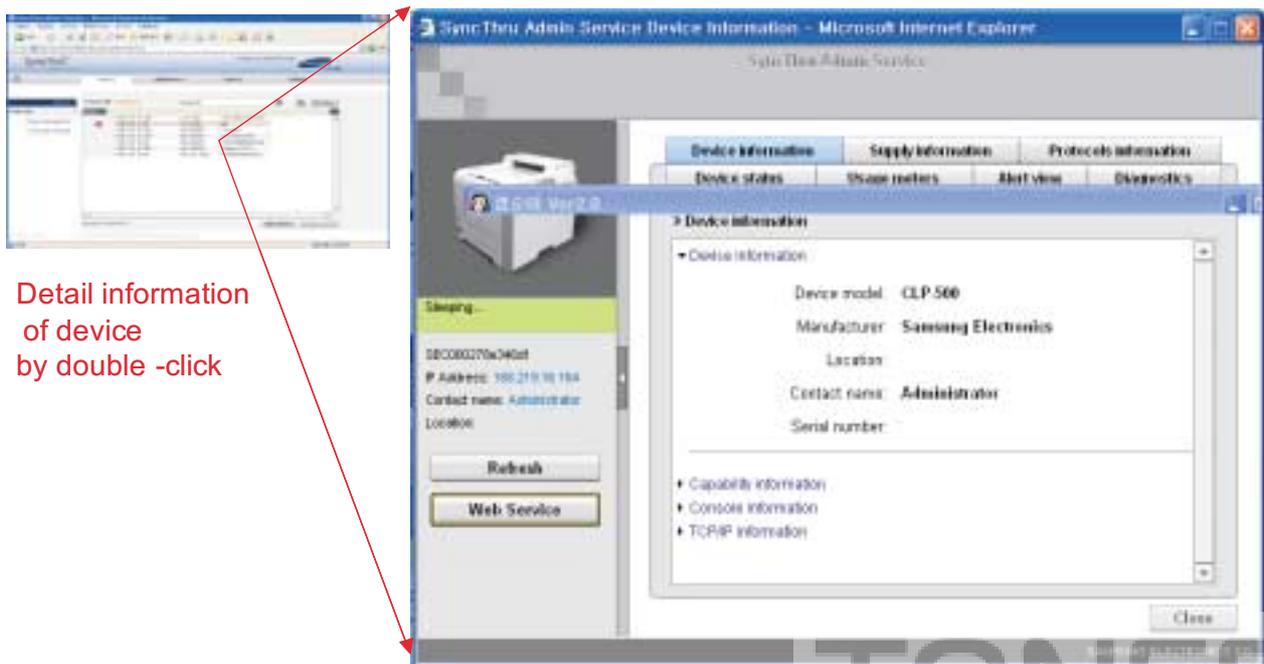
11.5.3 SWAS Device Menu

- Detecting and Displaying devices on the network



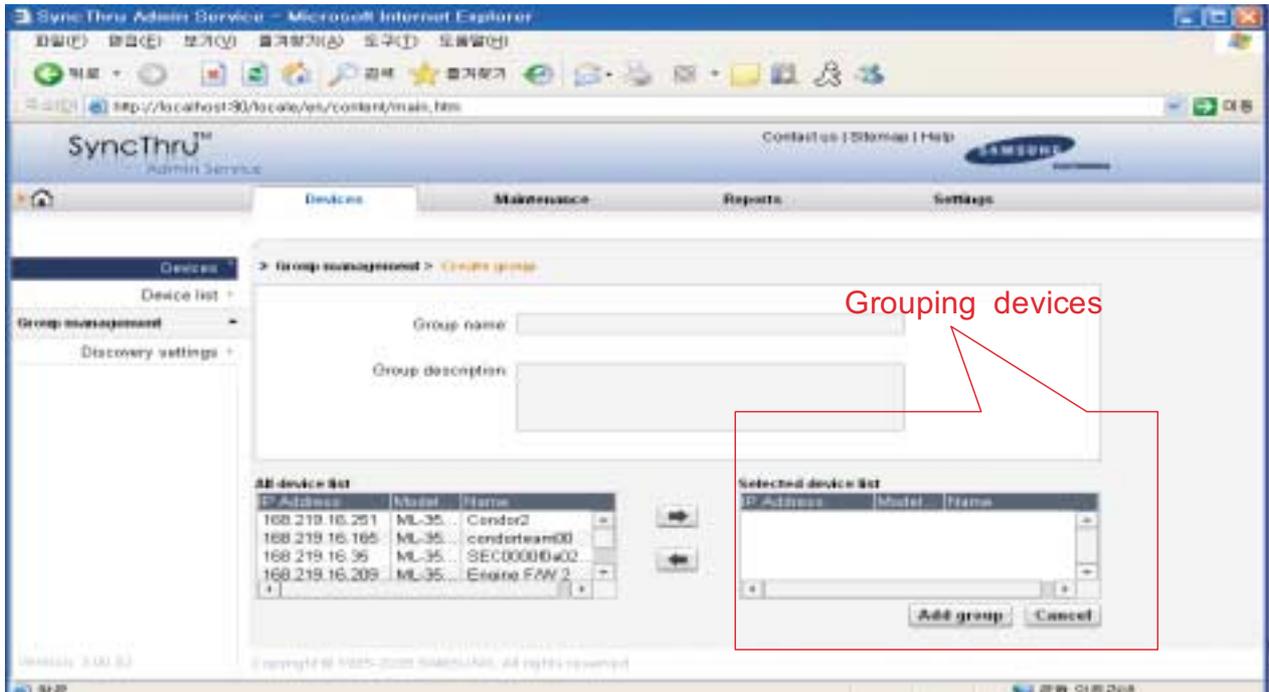
Device information in the network

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

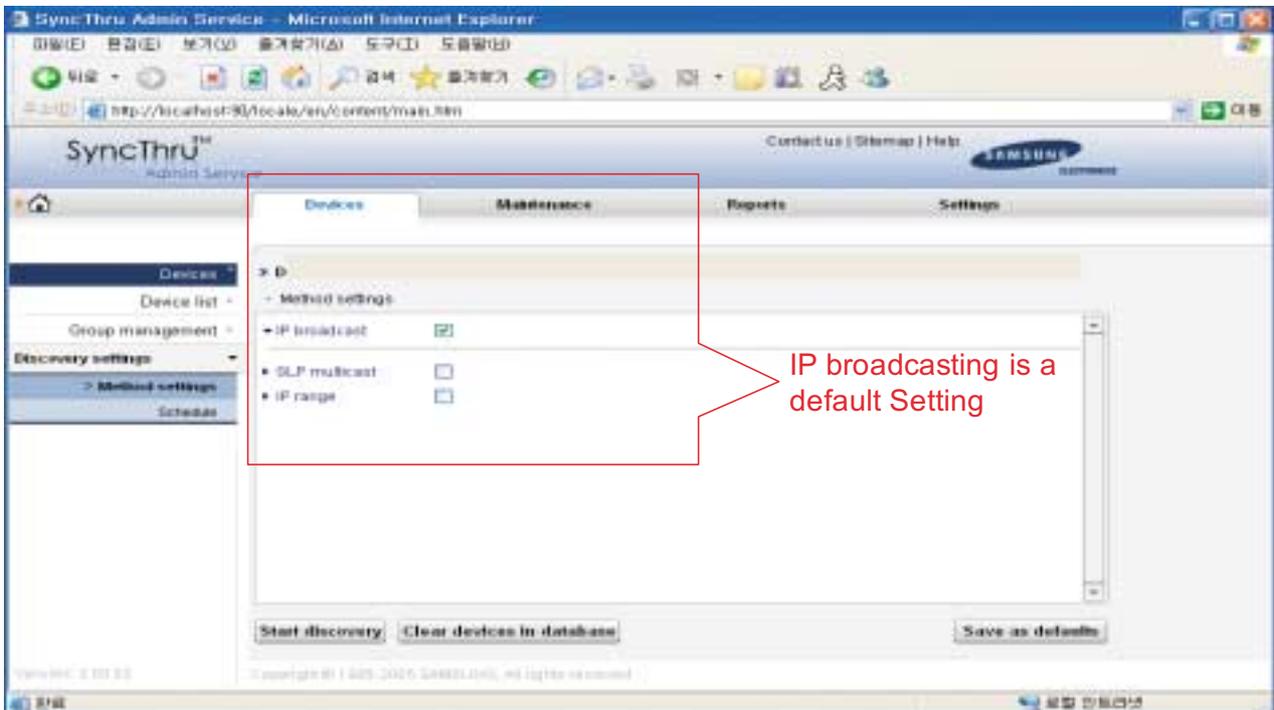


Detail information of device by double -click

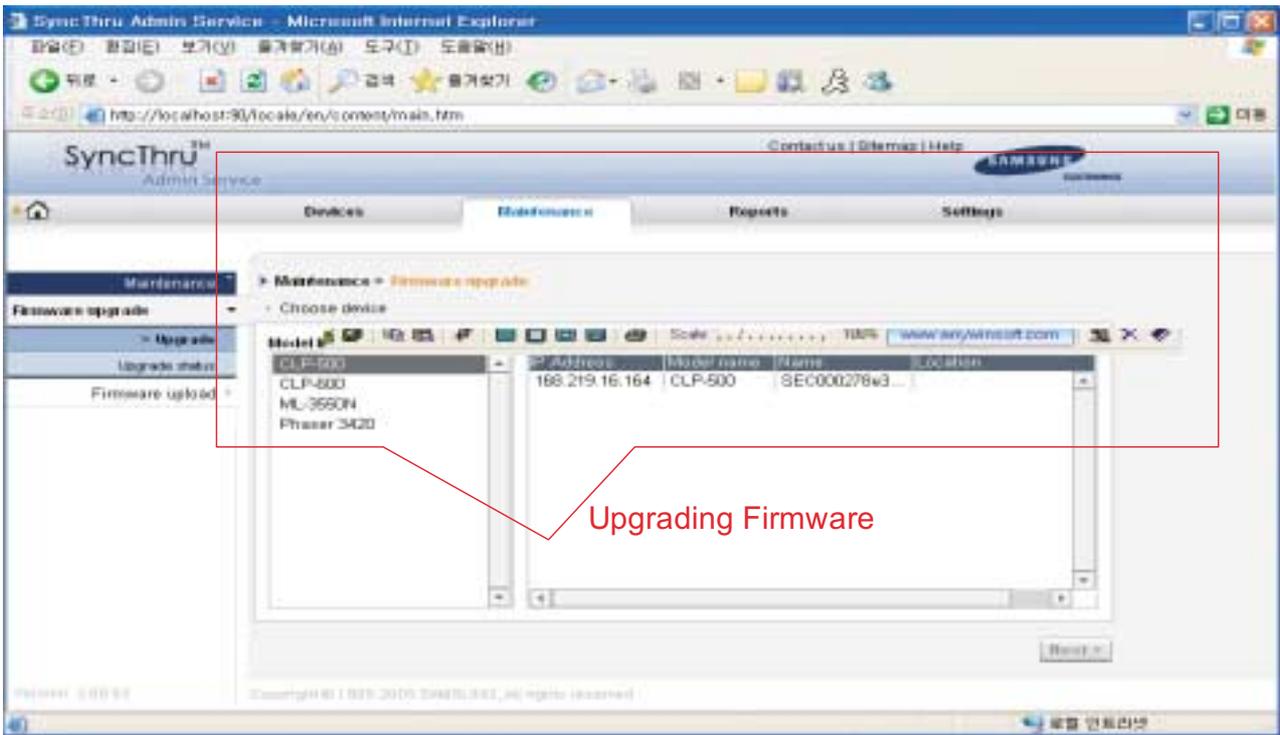
• Grouping and Managing devices



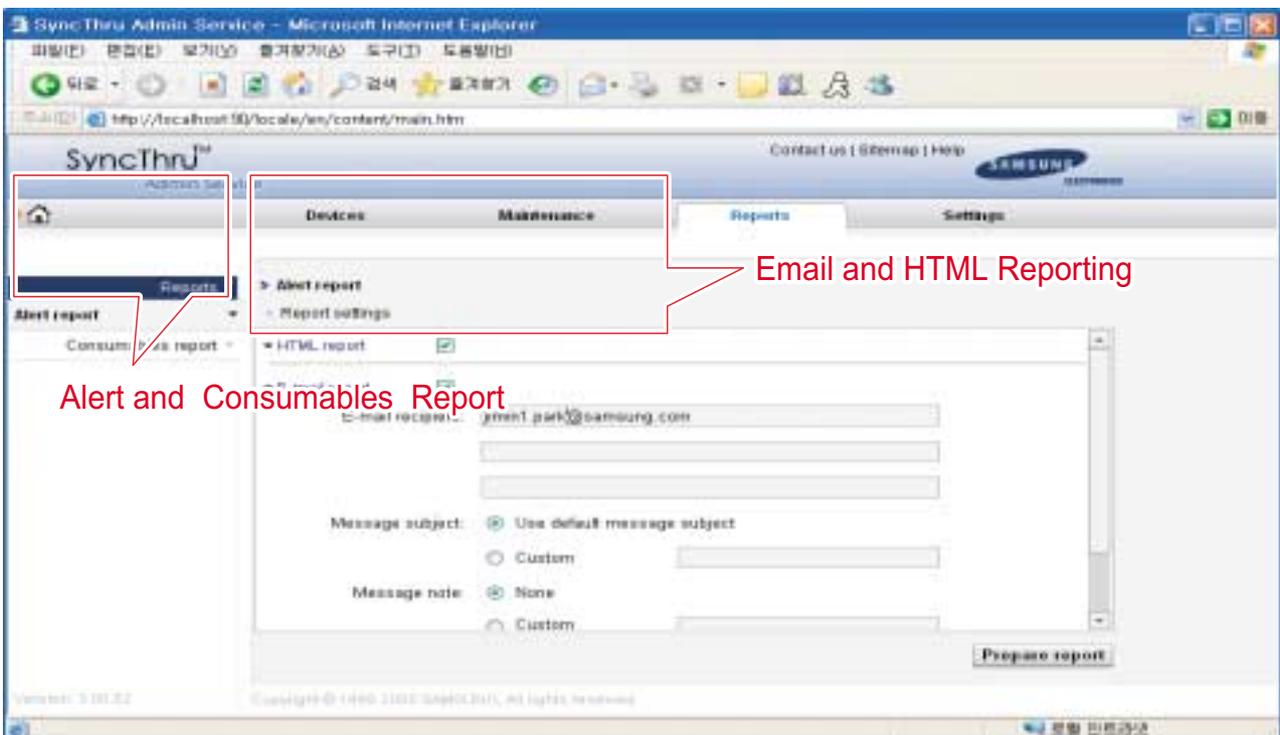
• Setting of detection Protocol



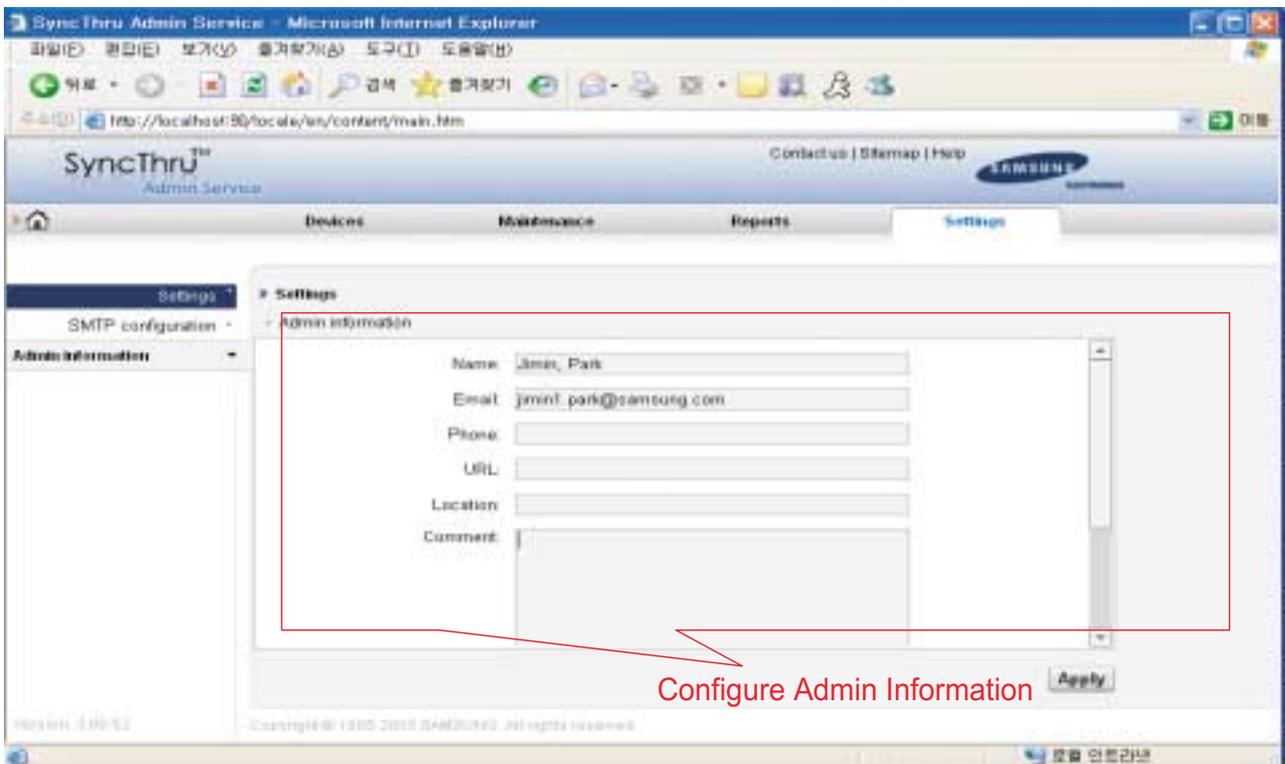
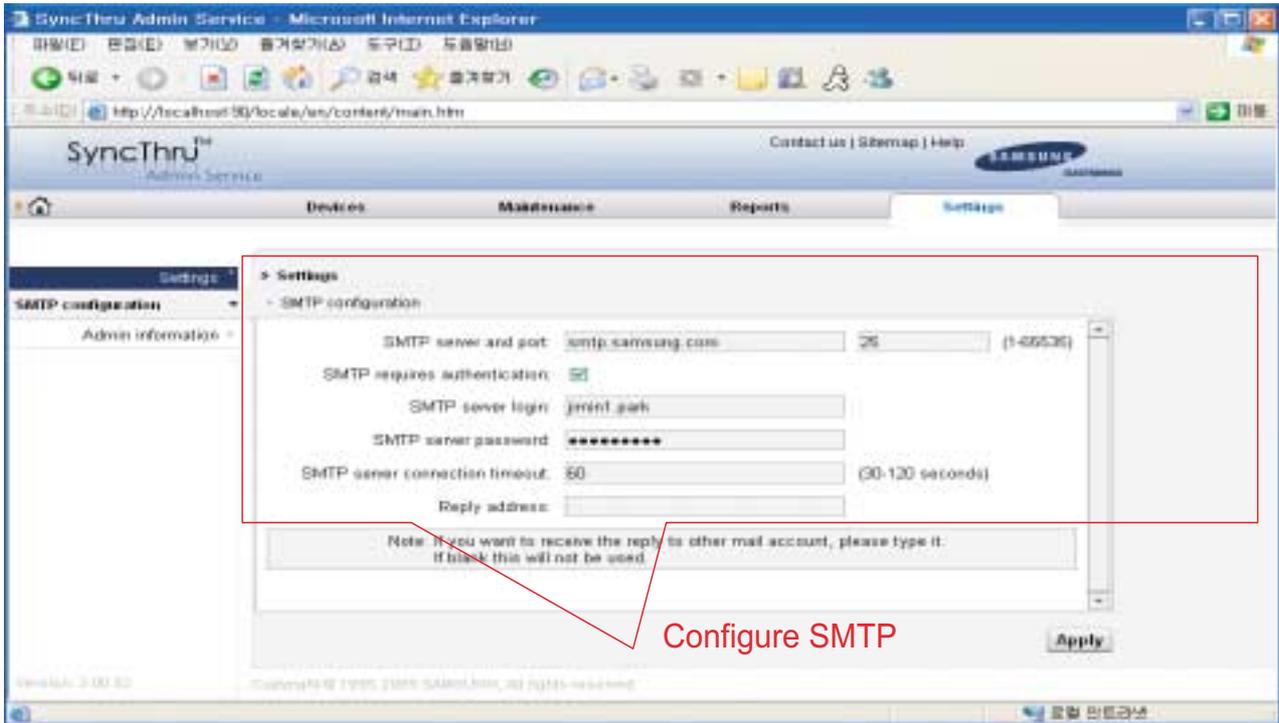
• Upgrading Firmware to multiple devices



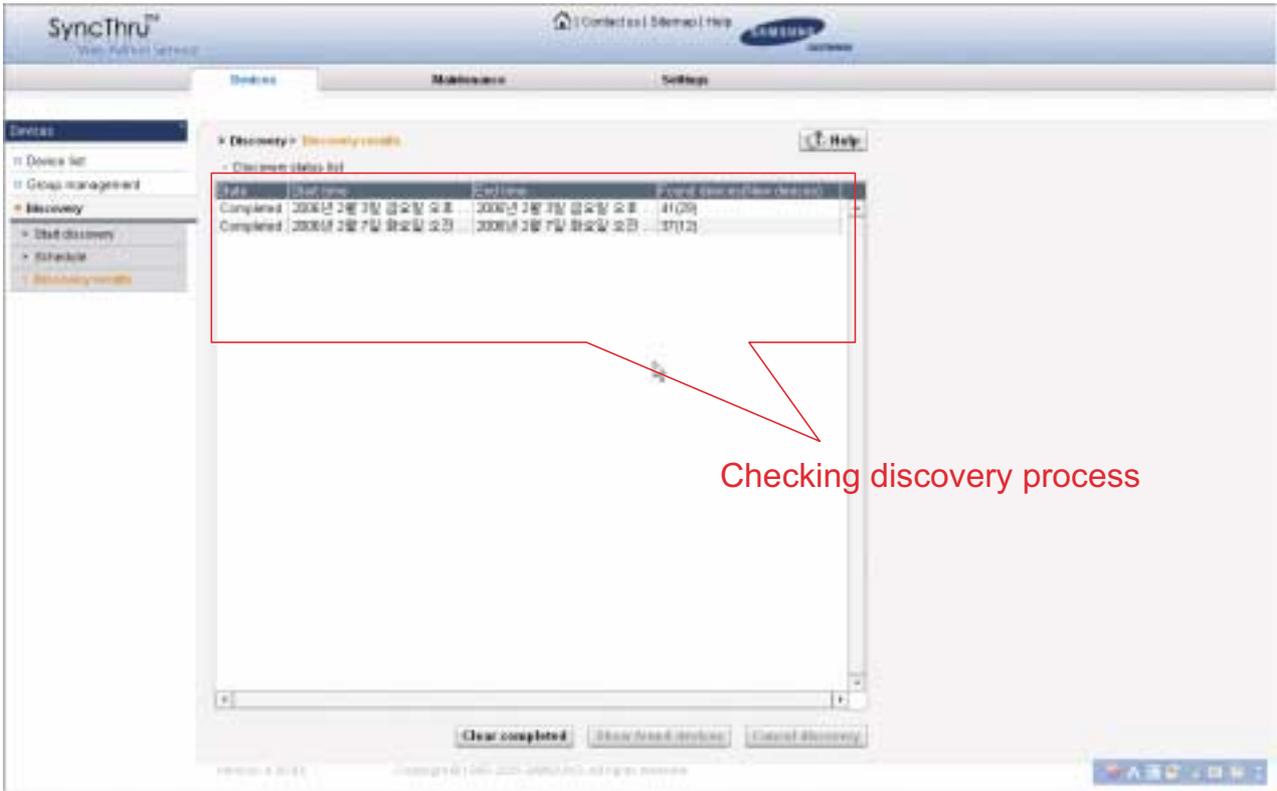
• Reporting information of Alert and Consumables by HTML or Email



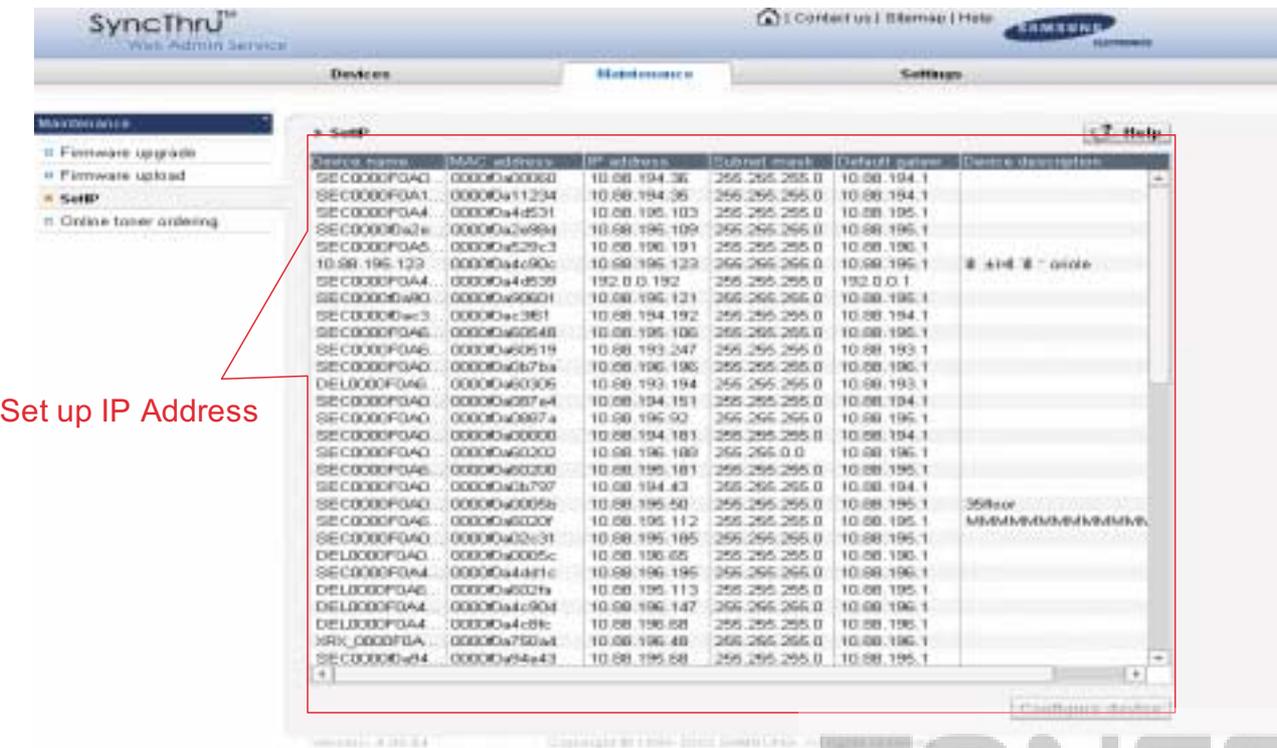
· Configure SMTP Server and Admin Information



• Discovery results



• Set up IP



• Online toner ordering

SyncThru™
Web Admin Service

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SAMSUNG ELECTRONICS

Devices Maintenance Reports Settings

Maintenance

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

Online toner ordering Help

Show devices with no cartridge only

Toner status	Name	IP Address	Physical address	Location	Model name
No cartridge	SEC00000a2e98d	10.88.195.109	00:00:F0:A2:E9...		ML-3660
	SEC000278446fdc	10.88.195.99	00:02:78:44:6F...		CLP-600

Toner ordering site Order toner

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

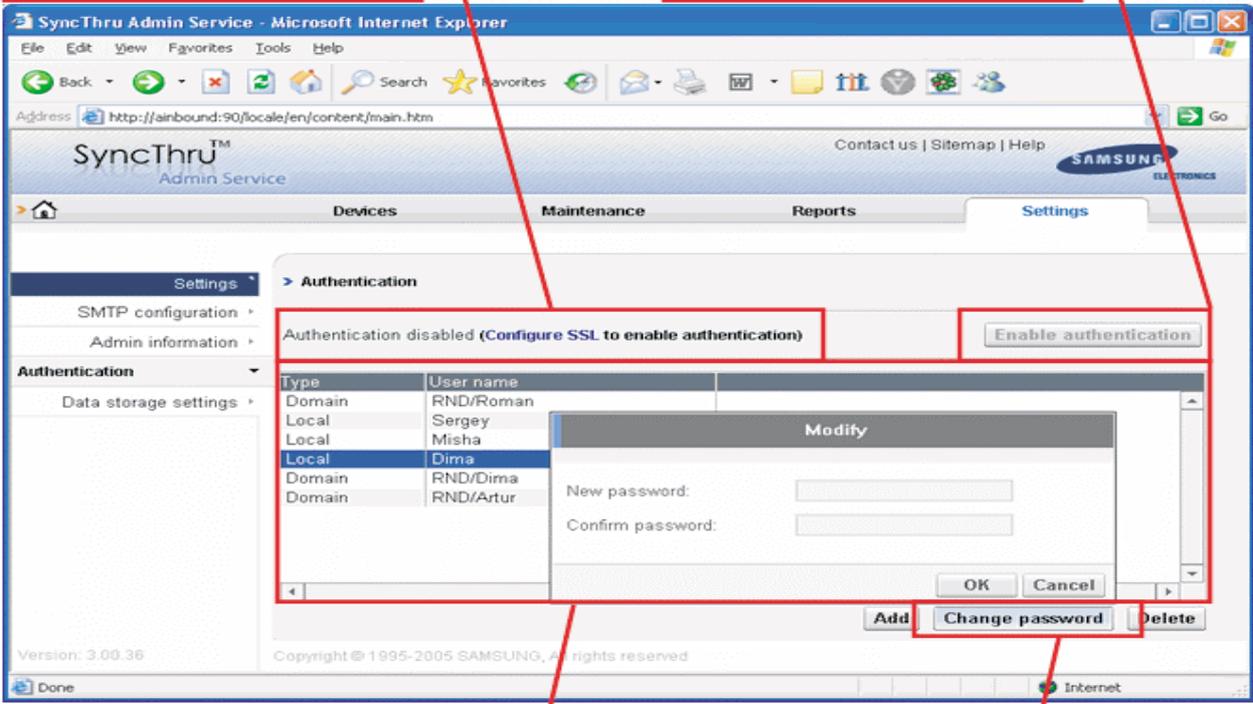
You can set the site for toner order.

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.



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. At the top, there is a blue header with the SyncThru Web Service logo and the Samsung logo. Below the header is a navigation menu with options: Home, Information, Machine Settings, Network Settings, Maintenance, and Support. The main content area is divided into several sections:

- Information:** A sidebar on the left contains expandable sections for Machine Status, Supplies Status, Billing/Counters, Network Information, Firmware Version, and Print Information. Below this is a language selection dropdown set to English and a Job Manager button.
- Home >>:** The main content area starts with a 'Home >>' link.
- Supplies Status:** A table showing the status of toner and drum cartridges.

Black Toner :	Ready
Drum Cartridge :	Ready
- Paper Sources:** A table showing the status of paper sources.

Copy Tray :	Tray 1
-------------	--------
- Input Trays:** A table showing the status of input trays.

Tray1 :	Ready
MP Tray :	Empty
- Printer Image and Error Message:** An image of the printer is shown. Below it, a yellow error message reads: "Transferring Tray1 Paper Mismatch".
- Printer Details:** A box containing the following information:
 - SCX-6x45 Series
 - Name : SEC0000AA90044F
 - IP Address : 10.88.195.148
 - Contact : Administrator
 - Location :
- Refresh Button:** A button labeled "Refresh" is located at the bottom of the printer details box.

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11.7 Samsung SyncThru Web Service: Machine Settings (MFP)

Machine Settings

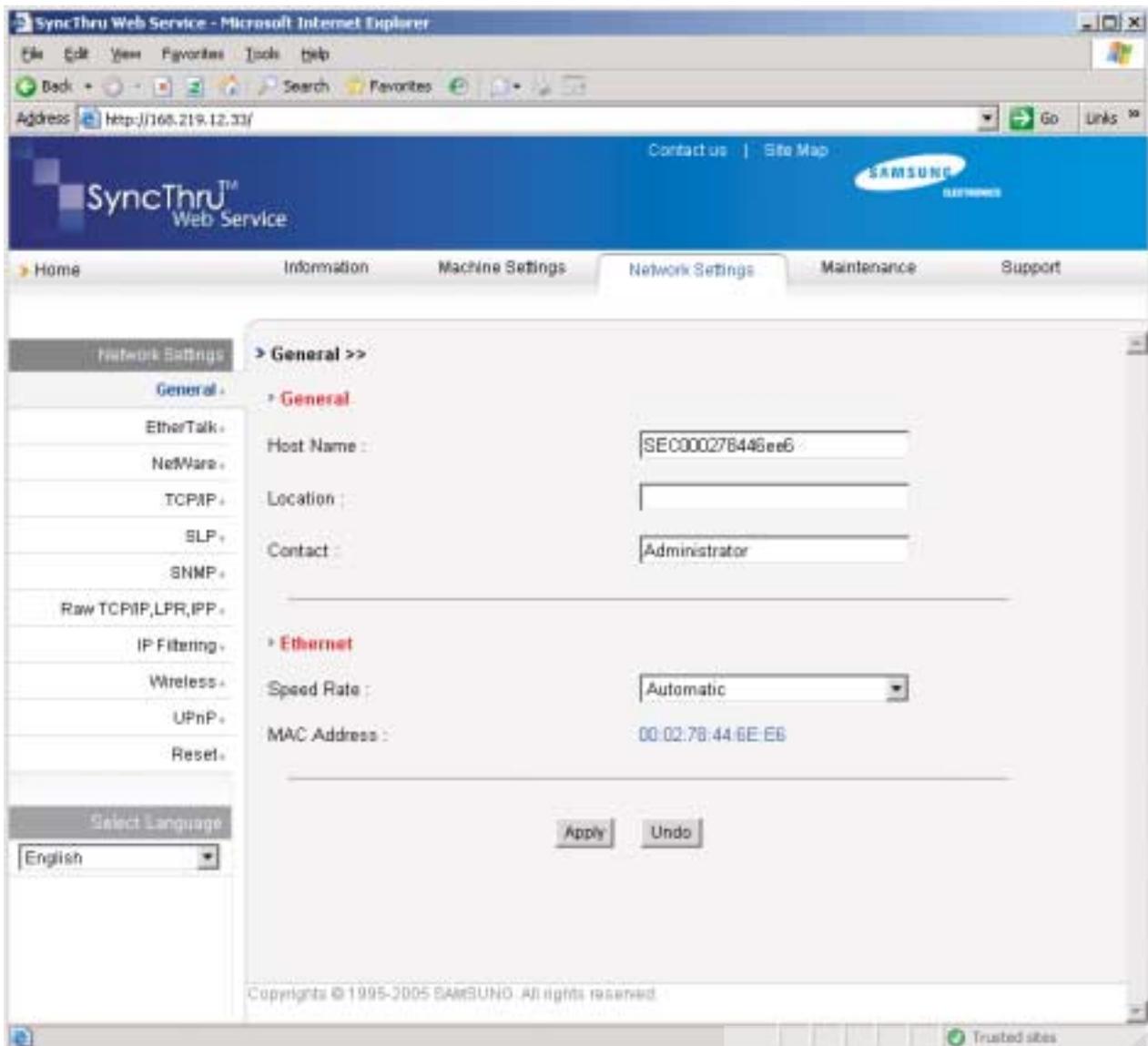
- System Setup
- Copy Setup
- User Authentication Setup
- E-mail Setup
- E-mail Notification Setup
- Reset
- ...

The screenshot shows the Samsung SyncThru Web Service interface. The top navigation bar includes 'Home', 'Information', 'Machine Settings', 'Network Settings', 'Maintenance', and 'Support'. The 'Machine Settings' section is expanded, showing a list of options: 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 list is a 'Select Language' dropdown set to 'English'. The main content area is titled '> System Setup > Paper Setup >>'. It contains three sections: 'Paper Size' with 'Tray 1' set to 'A4' and 'MP Tray' set to 'Letter'; 'Paper Type' with 'Tray 1' and 'MP Tray' both set to 'Plain Paper'; and 'Paper Source' with 'Copy Tray' set to 'Tray 1'. At the bottom of the form are 'Apply' and 'Undo' buttons. A copyright notice at the bottom reads 'Copyright © 1995-2008 SAMSUNG. All rights reserved.'

11.8 Samsung SyncThru Web Service: Network Settings

Network Settings

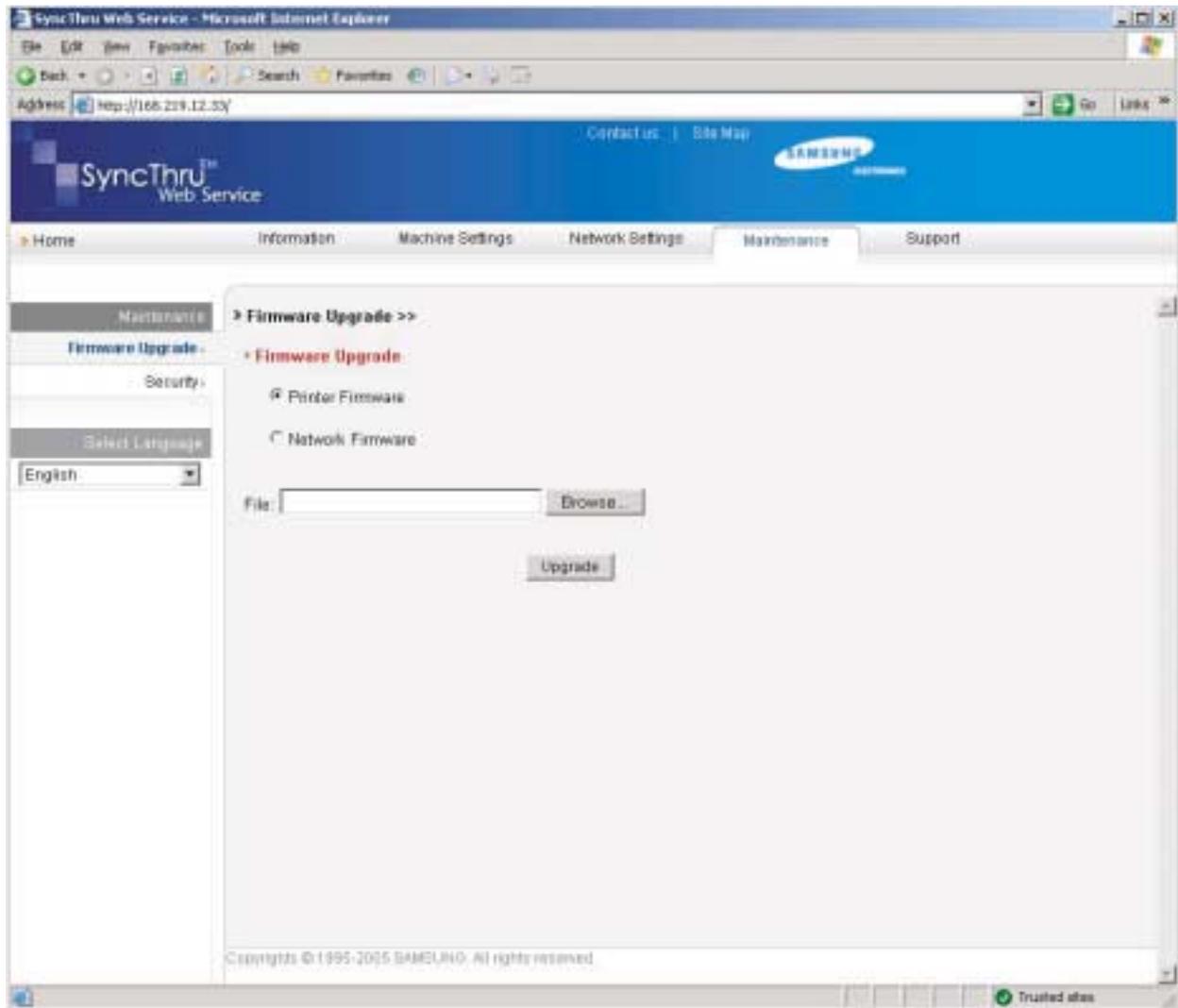
- General
- NetWare
- TCP/IP
- SLP
- SNMP
- Raw TCP/IP, LPR, IPP
- IP Filtering
- Wireless
- UPnP
- Reset



11.9 Samsung SyncThru Web Service: Maintenance

Maintenance

- Firmware Upgrade
- Security



11.10 Samsung SyncThru Web Service: Support

Support

- Contact Information
- Link

SyncThru™
Web Service

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

Support

Contact Information -

Link -

Select Language

English

Contact Information >>

System Administrator

Name:

Phone Number:

Location:

E-mail Address:

Samsung Support

Customer Support Phone Number:

Services Phone Number:

Supply Phone Number:

Apply Undo

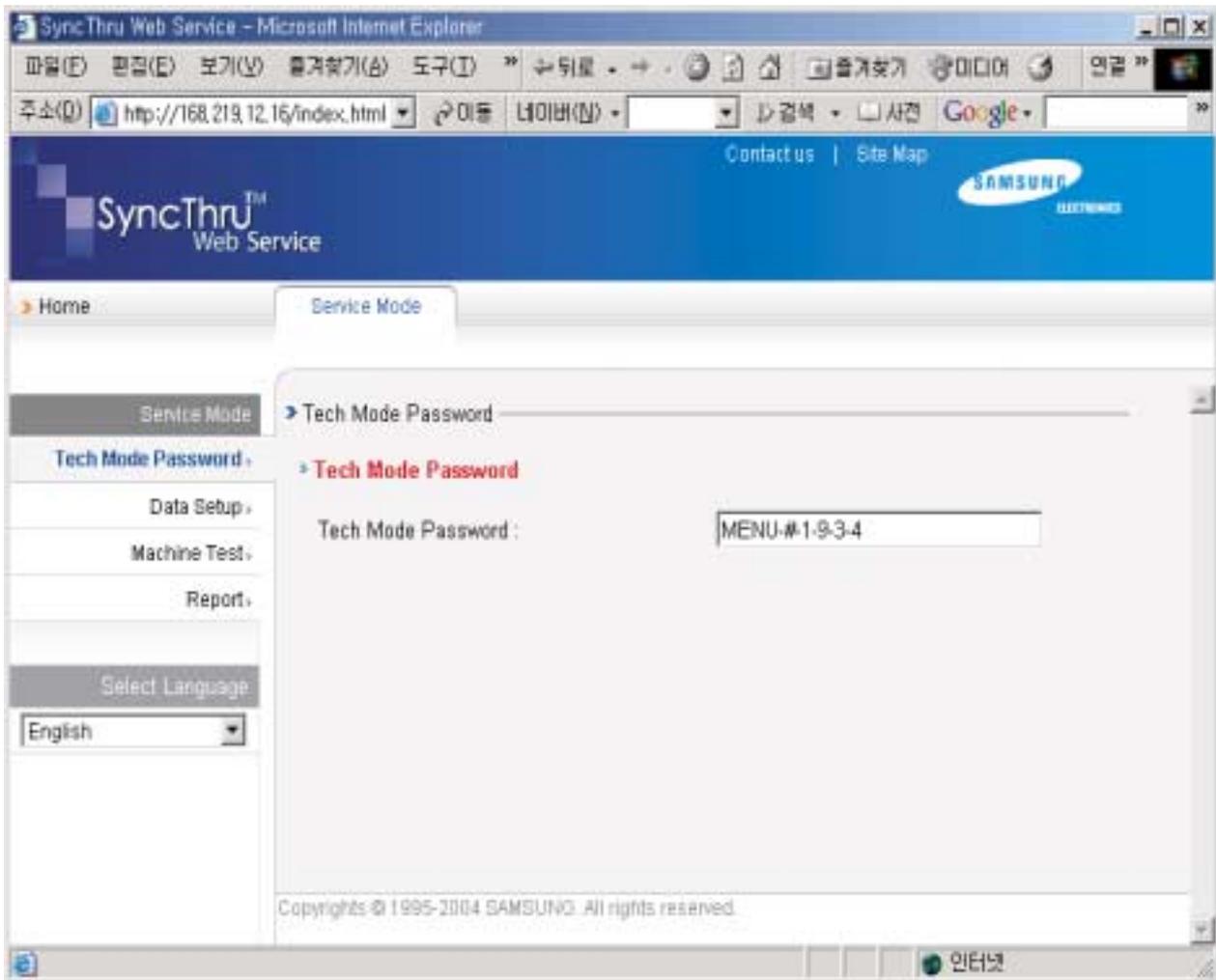
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Trusted sites

11.11 Samsung SyncThru Web Service: Service (MFP)

Service

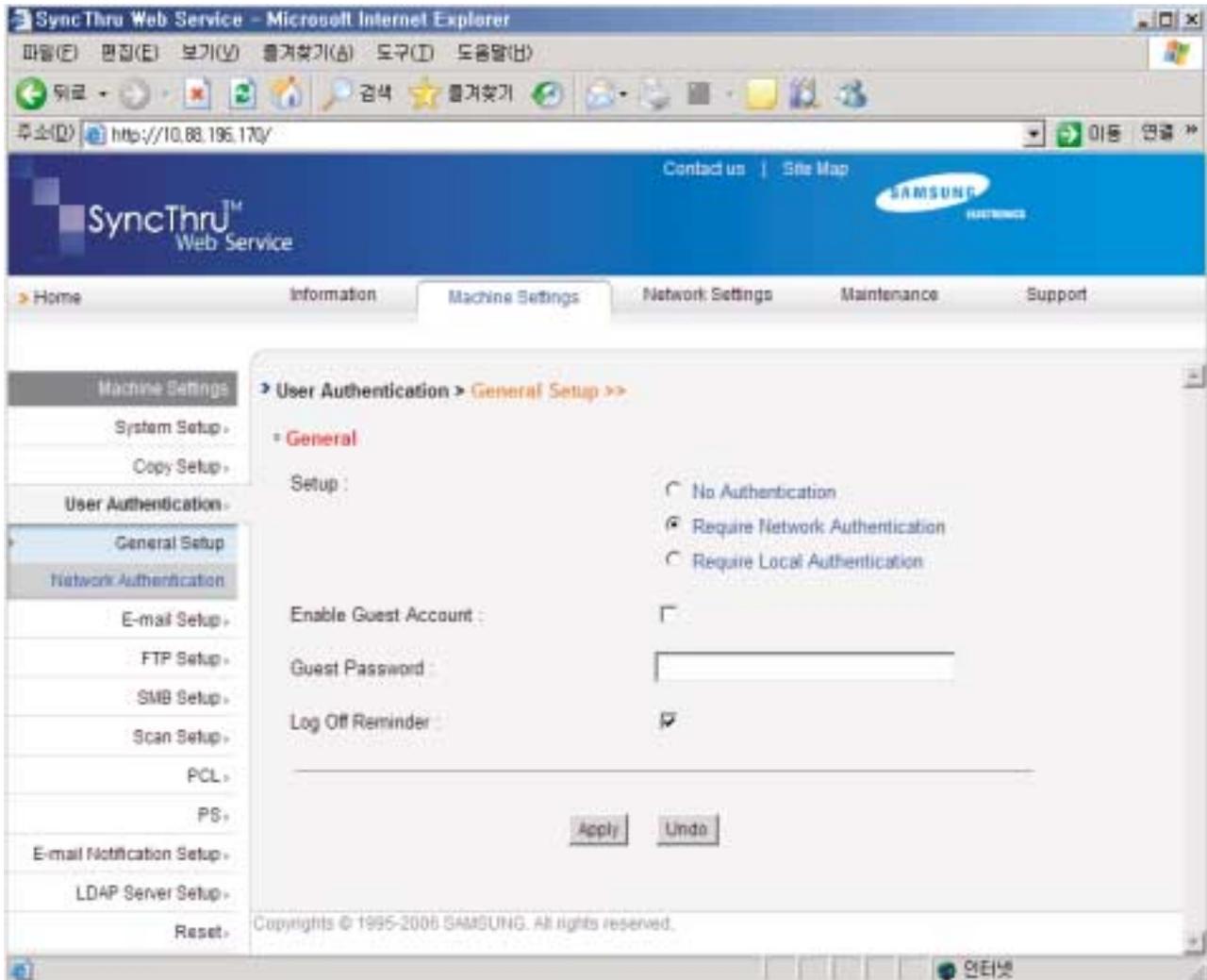
- http://NPC-IP-Address/service.html
- Tech Mode Password
- Data Setup
- Machine Test
- Report



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. The browser address bar displays `http://10.00.196.170/`. The page title is "SyncThru™ Web Service" with the Samsung Electronics logo. The navigation menu includes "Home", "Information", "Machine Settings", "Network Settings", "Maintenance", and "Support". The "Machine Settings" tab is active, and the "Local Authentication" option is selected in the sidebar. The main content area is titled "> User List Setup >>" and contains the following fields:

- Index: 1
- User Name: bjiang
- Auth ID: auth1
- Password: [masked]
- Retype password: [masked]
- Select to save new password.
- E-mail Address: bjay@naver.com
- Phone Number: 011-222-4444

At the bottom of the form, there 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 for Network Authentication configuration. The browser address bar shows `http://10.88.196.170/`. The page title is "SyncThru™ Web Service". The navigation menu includes Home, Information, Machine Settings, Network Settings, Maintenance, and Support. The left sidebar shows a tree view with categories like Machine Settings, User Authentication, and E-mail Setup. The main content area is titled "Authentication > Network Authentication >>" and contains the following configuration options:

- Authentication Type:**
 - Kerberos (Unix, Linux)
 - Kerberos (Windows ADS)
 - SMB (Windows NT 4)
 - SMB (Windows ADS)
 - LDAP
- Required Information:**
 - Default Realm:
 - IP Address or Host Name: IP Address, Host Name
 - Kerberos Server and Port: :
- Additional Information:**
 - Backup Realm:
 - IP Address or Host Name: IP Address, Host Name
 - Kerberos Backup Server and Port: :

Buttons for "Alternates...", "Apply", and "Undo" are visible at the bottom of the configuration area.

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

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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

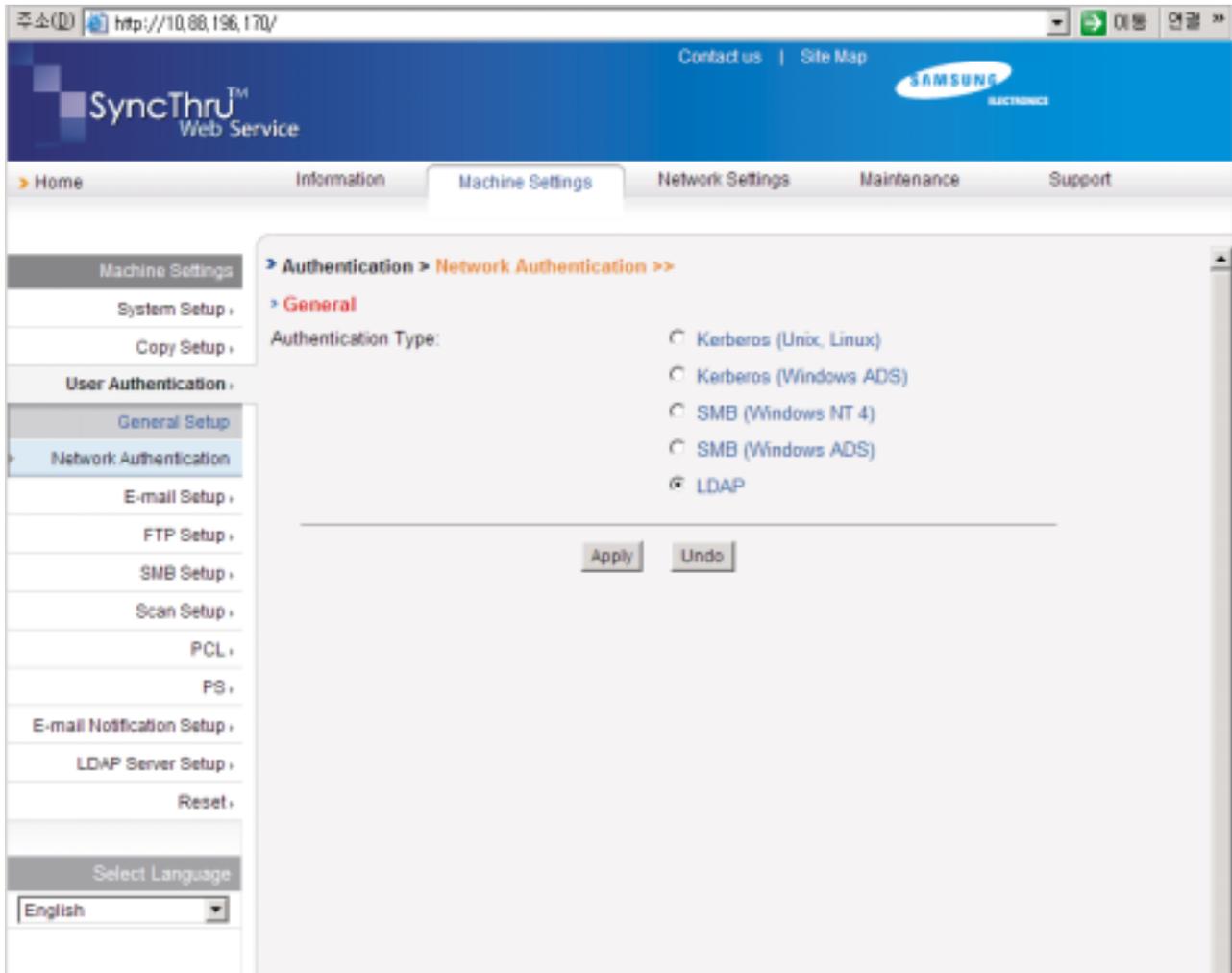
SMB Backup Server and Port: 10.88.195.117 : 139

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:

The screenshot shows the LDAP Server Setup configuration page. The breadcrumb navigation is "E.mail Setup > LDAP Server Setup >>". The "LDAP Server" section is expanded, showing the following fields:

- IP Address or Host Name :** Radio buttons for "IP Address" (selected) and "Host Name". A note states: "Note: If Host Name is selected, the DNS Server Address should be mentioned in TCP/IP settings page."
- LDAP Server and Port :** Text input "10 88 194 139", a spinner box for "389", and "(1-65535)".
- Optional Information** section:
 - Search Root Directory :** Text input "dc=example dc=com".
 - Authentication method :** Radio buttons for "Anonymous" and "Simple" (selected).
 - Match User's Login ID to the following LDAP attribute :** Dropdown menu with "CN" selected.
 - Append Root to Base DN:** Checkmark for "Enable".
 - Login Name :** Text input "cn=jimbo".
 - Password :** Text input "*****".
 - Maximum Number of Search Results :** Spinner box "25" with "(0, 5-100)".
 - Search Timeout :** Spinner box "30" with "(0, 5-100) second(s)".
 - LDAP Referral :** Checkmark for "Disable".

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

The screenshot displays a configuration interface for LDAP Server Setup. It is divided into two sections by horizontal lines. The first section is titled "Search Name Order" in red. Below the title, the text "Search Name Order:" is followed by three radio button options: "Common Name", "Email Address" (which is selected), and "Surname Given Name". The second section is titled "From: Field Security Options" in red. Below the title, the text "Perform LDAP query to Populate 'From:' Field:" is followed by a checked checkbox labeled "Enable". At the bottom of the form, there are two buttons: "Apply" and "Undo".

11.16 Samsung SetIP

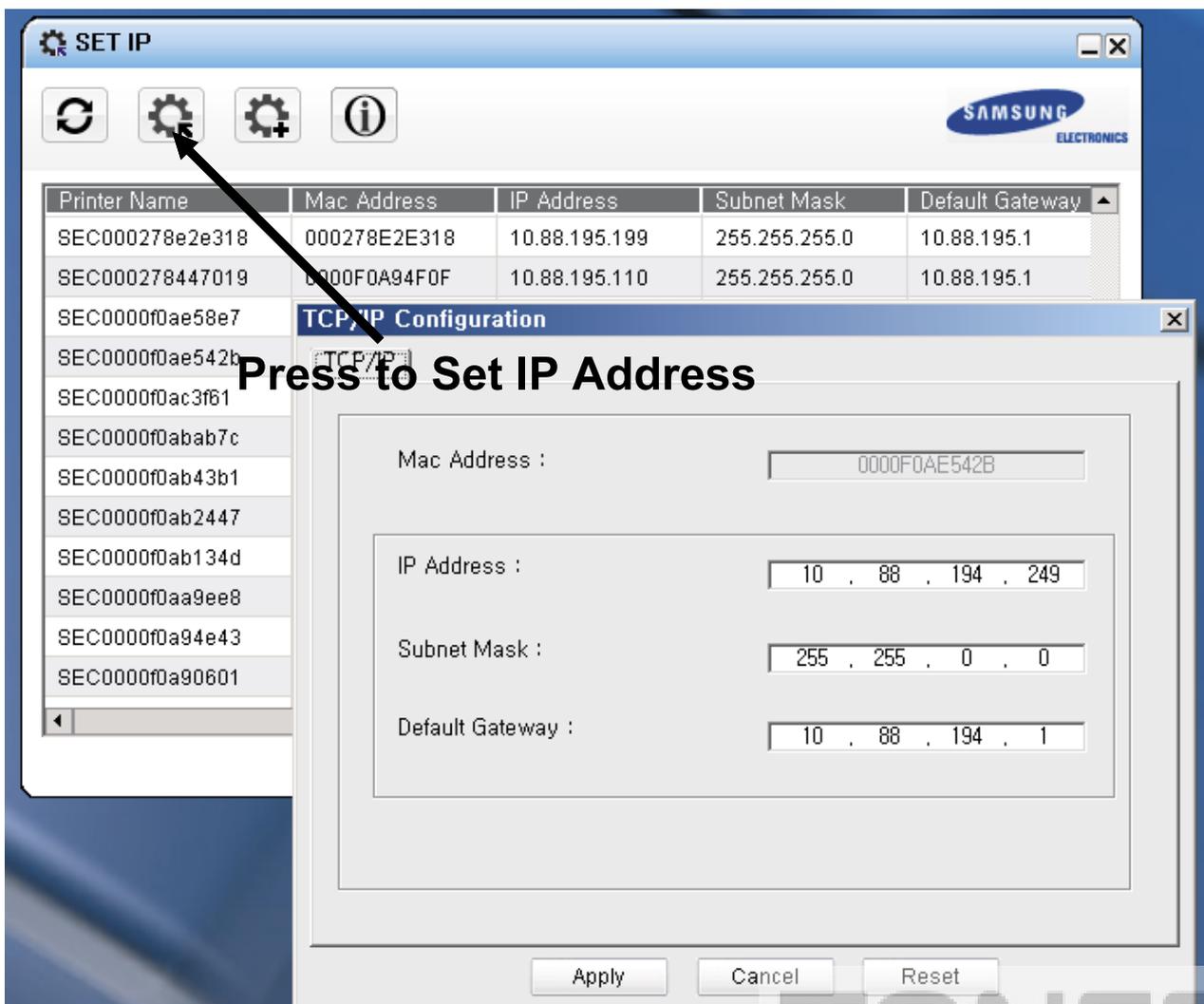
Configuration of IP Address

- 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

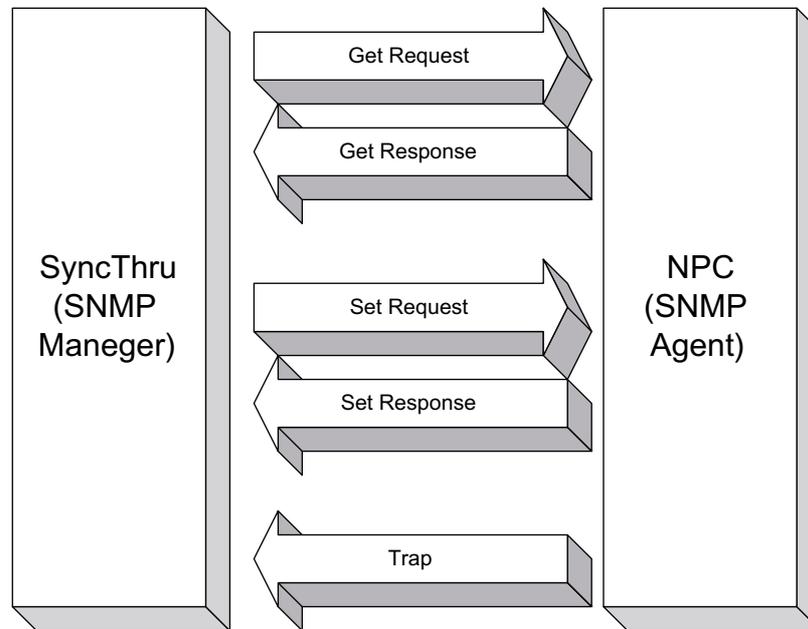
- TCP Port : 9100
- OS : Windows OS (Win 2K~)

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