# Security White Paper

# Enhanced Locked Print NX V2

Document Version 1.1.0

**Solution Support Department**
**Service and Support Center**
**Global Marketing Group**

Document version history:

| Version | Date of Issue | Revision |
|---|---|---|
| 1.0.0 | August, 2011 | Initial Release<br>This document applies to following product.<br>・ Enhanced Locked Print NX v2.0 |
| 1.1.0 | March, 2012 | This document applies to following product.<br>・ Enhanced Locked Print NX v2.1 |

## 1. Overview

This document describes the security information for Enhanced Locked Print NX (ELP-NX).

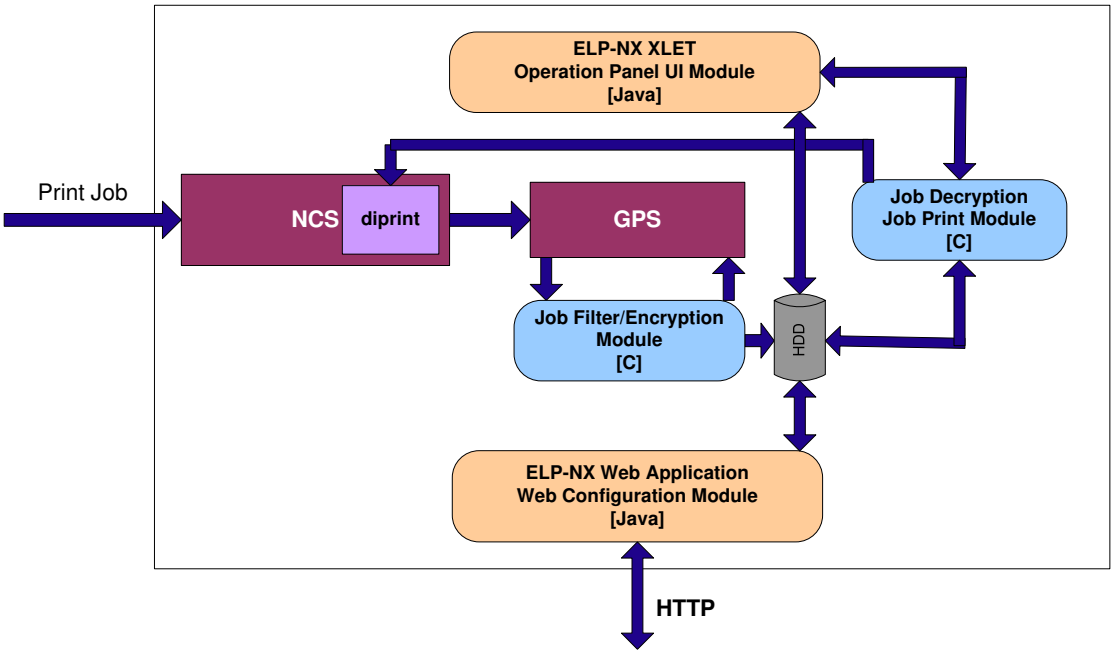
## 2. Document Workflow Security

If a user leaves a confidential document on a shared MFP, an unauthorized user may see it and print it.
ELP-NX prevents such unauthorized access. ELP-NX forces users to be authenticated before printing stored jobs. Traditional manual entry and IC card-based authentication are both supported. Stored jobs can be retained for later access, or deleted after printing for security.

## 3. Security Data Sheet

This section describes the details of print data flow and network protocol and port used in ELP-NX.

### 3.1. Overview



## 3.2. Network

**Protocols and Ports**

| Features | Service | Protocol | Port No | Destination | Purpose |
|---|---|---|---|---|---|
| DNS Setup | DNS | UDP | 53 (*1) | DNS Server | Name resolution |
| P2P (ELP-NX to ELP-NX) | FRPRINT (ELP-NX) | TCP | 8080 (*4) | ELP-NX | User/Job List acquisition, User information editing, Delete print request |
| ELP-NX FS connection (Default) | FRPRINT (ELP-NX FS) | TCP | 8080 (*1)(*3) | ELP-NX FS | User/Job List acquisition, User information editing, Delete print request |
| ELP-NX FS connection (SSL) | FRPRINT (ELP-NX FS) | TCP | 8443 (*1)(*3) | ELP-NX FS | User/Job List acquisition, User information editing, Delete print request |
| Print via Standard TCP/IP | Standard TCP/IP | TCP | 9100/ (*2) | Client PC | Spool |
| LPR Print | LPR | TCP | 515 (*2) | | Spool |
| IPP Print | IPP | TCP | 631 (*2) | | Spool |
| IPPS Print | IPPS | TCP | 433 (*2) | | Spool |
| Job Deletion Tool | FRPRINT (ELP-NX) | TCP | 8080 (*2) | | Job Deletion Tool (HTTP) |
| Web Image Monitor | HTTP | TCP | 80 (*2) | | WebImageMonitor |
| Web Image Monitor (SSL) | HTTPS | TCP | 443 (*2) | | WebImageMonitor |
| Configuration Tool | FRPRINT (ELP-NX) | TCP | 8080 (*2) | Management Client PC | Configuration Tool (HTTP) |
| Configuration Tool (SSL) | FRPRINT (ELP-NX) | TCP | 51443 (*2) | | Configuration Tool (HTTPS) |
| Configuration Tool | FRPRINT (ELP-NX) | UDP | 50007 (*2) | | Device search (Discovery) |

(*1) Ports opened on the server side when ELP-NX connects to the server as a client.
(*2) Ports opened by ELP-NX
(*3) Port can be changed.
(*4) ELP-NX acts as both a client and a server.

**Recommended precautions**

Configuration Tool

HTTP or HTTPS can be used to connect from ELP-NX to the Configuration Tool. When changing the administrator's password, using HTTPS is recommended because the password is not encrypted if HTTP is used. ELP-NX uses TLS v1.0 when HTTPS is enabled.

## 3.3. Stored Data and Processes

**Stored Data**

| Data Type | Specifications |
|---|---|
| Print Job | Print jobs are stored on the device HDD with blowfish encryption. |
| Job DB | This database manages the stored print jobs for each user. This database is encrypted. |
| System Configuration | The settings for ELP-NX are stored on the device HDD. In addition, the password is encrypted using AES 128-bit.<br>The configuration file can be imported only by administrator. The configuration file is always encrypted. |
| Log | Administrator can import and export the logs via Configuration Tool.<br>The log files are not encrypted. The following logs are available:<br>- Delete Log<br>- Analyze Log |

**Processes**

| Data Type | Account Type | Action | Description |
|---|---|---|---|
| Print Job DB | System | Add<br>Delete | System stores the print job in the local HDD and encrypts it.<br>System deletes the stored job(s) after a certain period, if the "Auto delete timer" function is enabled. |
| | Administrator | Read<br>Delete | Used for administrator actions (check job list, delete stored jobs). |
| | User | Delete | User reads and deletes job(s) via the operation panel. |
| System Configuration | System | Add | System creates the configurations after installed. |
| | Administrator (*) | Read<br>Modify | System downloads and modifies the configurations via administrative tool. |
| Log | System | Add<br>Delete | System adds and deletes the logs. |
| | Services Engineer (*) | Read | Service Engineer downloads the log files via administrative tool. |

(*) The use of SSL is recommended whenever possible.

**Recommended Precautions**

If all delete options are disabled, the device's HDD may become full due to the number of stored jobs. If the automatic deletion functions are not used, please manage the stored jobs to ensure that the device HDD does not become full.

**Data Type and Encryption**

●: AES 128-bit Encryption
○: Plain Text or AES 128-bit Encryption, depending on the settings
△: Plain text only
－: Data not stored/transmitted

| Data Type | System Log (*1) | Delete Log | Network Communication (*2) | | | | HDD Storage (*3) |
|---|---|---|---|---|---|---|---|
| | | | Administrator PC to ELP-NX | User PC to ELP-NX | P2P | ELP-NX FS | |
| User Name/User ID | △ | △ | ○ | ○ | △ | ○ | ○ |
| Password | － | － | ● | － | ● | ● | ● |
| Display Name | △ | △ | ○ | － | △ | ○ | ○ |
| Job info (e.g. job's name) | △ | △ | ○ | ○ | △ | ○ | ● (*4) |
| Host Name/IP (Print Client) | △ | △ | ○ | － | △ | － | ○ |
| Host Name/IP (ELP-NX FS | △ | △ | ○ | － | － | ○ | ○ |
| Configuration Tool password | － | － | ● | － | － | － | ● |

(*1) Some log information can be masked using the Log Masking Tool.
(*2) The items marked with ○ can be encrypted through HTTPS connection.
(*3) Encryption is only available through the HDD encryption option.
(*4) If the [Encrypt Stored Document] option setting is enabled. This encryption will stack with the HDD encryption option for extra security.