

Security Guide

Xerox® FreeFlow® Vision Software



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1. Introduction

Overview

Xerox® FreeFlow® Vision is a Web-based software solution that offers real-time, at-a-glance visibility and control of production operations with a Web-based dashboard view. The dashboard solution monitors, tracks, and benchmark production performance across printers and across sites. The dashboard provides expandable charts for access to comprehensive information, historical information, and custom filtering.

Purpose

The purpose of the Security Guide is to provide information on printer security for Xerox® FreeFlow® Vision. Printer security is defined as how you can store and transmit data, how a printer behaves in a network environment, and how you can access the printer, both locally and remotely. This document describes the design, functions, and features of the Xerox® FreeFlow® Vision relative to Information Assurance (IA) and the protection of customer-sensitive information.

Note: The customer is responsible for the security of their network and Xerox® FreeFlow® Vision does not establish security for any network environment.

The Xerox® FreeFlow® Vision Security Guide does not provide tutorial-level information about security, connectivity, or Xerox® FreeFlow® Vision features and functions. This information is available elsewhere. It is assumed that the reader has a working knowledge of these types of topics.

Target Audience

The target audience for this document is Xerox field personnel and customers who require more security-related information regarding the Xerox® FreeFlow® Vision software. It is assumed that the reader is familiar with the application. Some user actions are not described in detail.

Disclaimer

The content of this document is provided for information purposes only. Performance of the printers referenced is exclusively subject to the applicable Xerox® Corporation terms and conditions of sale and/or lease. Nothing stated in this document constitutes the establishment of any additional agreement or binding obligations between Xerox® Corporation and any third party.

2. Product Description

Xerox® FreeFlow® Vision User Functionality

Xerox® FreeFlow® Vision user functionalities are as follows:

- Monitor, track, and benchmark production performance across presses and sites.
- Acquire, analyze, and compare current and historical reports from various easy-to-view charts.
- Identify, measure, and track system and process efficiencies and inefficiencies.
- Generate and export productivity reports.
- Manage and register license information, printers, users, and impressions targets.

System Requirements

Xerox® FreeFlow® Vision runs on a network-accessible computer and requires all printers that need monitoring are to be accessible on the network. The main interface to the dashboard is a Web browser.

SUPPORTED WEB BROWSERS

Modern Web browsers such as Apple® Safari, Google Chrome™, Edge®, and Mozilla® Firefox are supported. Ensure that the latest versions of Web browsers are used.

Active Directory Sign On

To improve user experience, Xerox® FreeFlow® Vision offers an optional Active Directory Sign-On capability. To access multiple applications, one set of login credentials is used, so that you can launch Xerox® FreeFlow® Vision without the need to provide additional credentials.

Print Server-Configured SNMP Protocols

If the print server is configured to use SNMP Protocol Version 1 or Version 2 (SNMPv1 or SNMPv2c), the following fields appear in the Add Printer dialog:

- DFE FQHN
- Read Community Name
- DFE SNMP Protocol Version (v1 or v2c)

If the print server is configured to use SNMP Protocol Version 3 (SNMPv3), the following fields appear in the Add Printer dialog:

- DFE FQHN
- DFE SNMP Protocol Version (v3)
- Secure Username
- Authentication Type: **MD5**, **SHA**, or **None**
 - Authentication Password: If the Authentication Type selection is **MD5** or **SHA**

- Privacy Type: **AES**, **DES**, or **None**
 - Privacy Password: Available if the Privacy Type selection is **AES** or **DES**

Architecture and Workflows

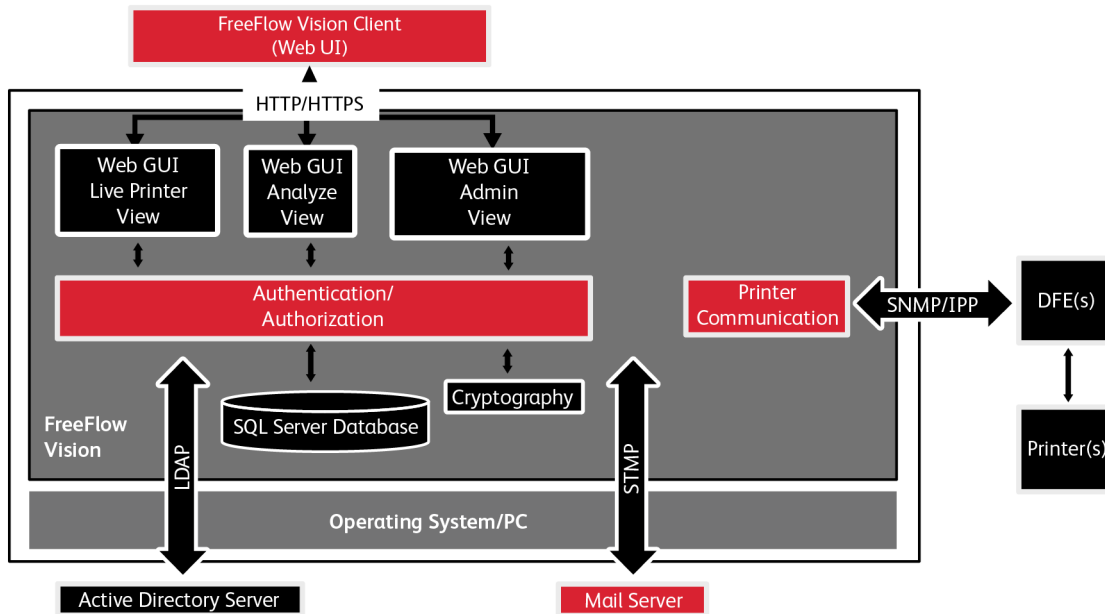
NETWORK CONNECTIONS

Xerox® FreeFlow® Vision requires network connectivity for both printer connectivity and user interactions.

Note: To provide better security protection against vulnerability attacks, enable the Windows firewall on the server where FreeFlow® Vision is installed

Xerox® FreeFlow® Vision uses the following network protocol connections:

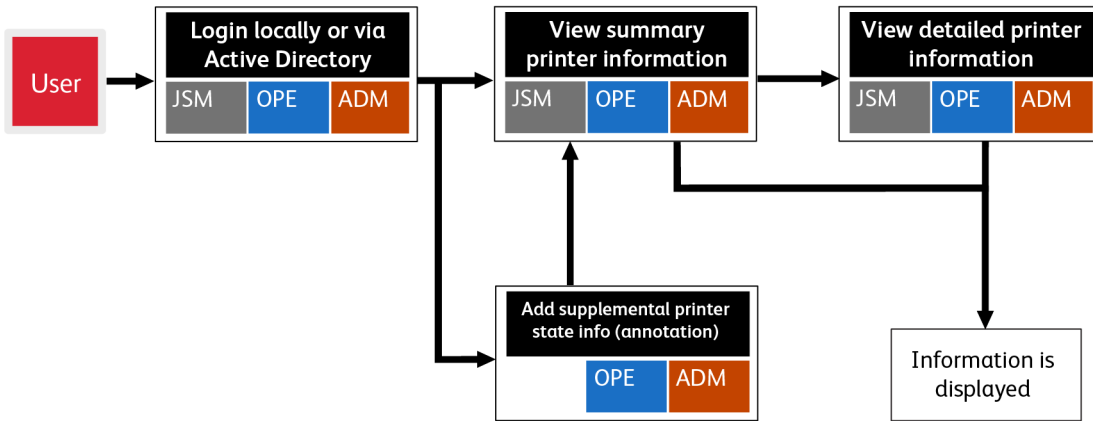
Figure 2.1 Xerox® FreeFlow® Vision Network Connectivity



WORKFLOWS

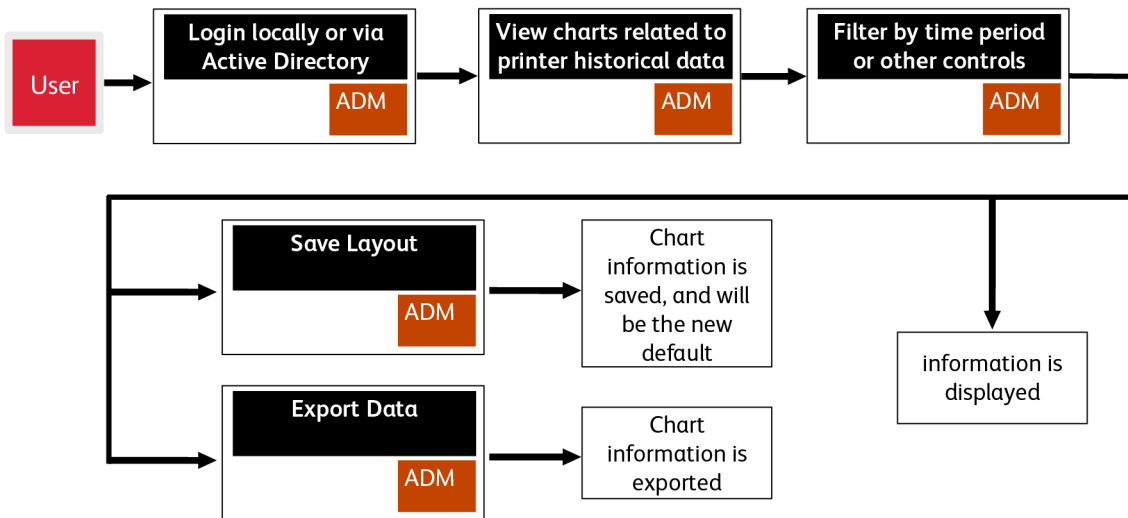
Users can log in locally to the application or as an Active Directory user. Regardless of how the user logs in, the workflows are available in following figures.

Figure 2.2 Xerox® FreeFlow® Vision Workflow – View Information from Printers



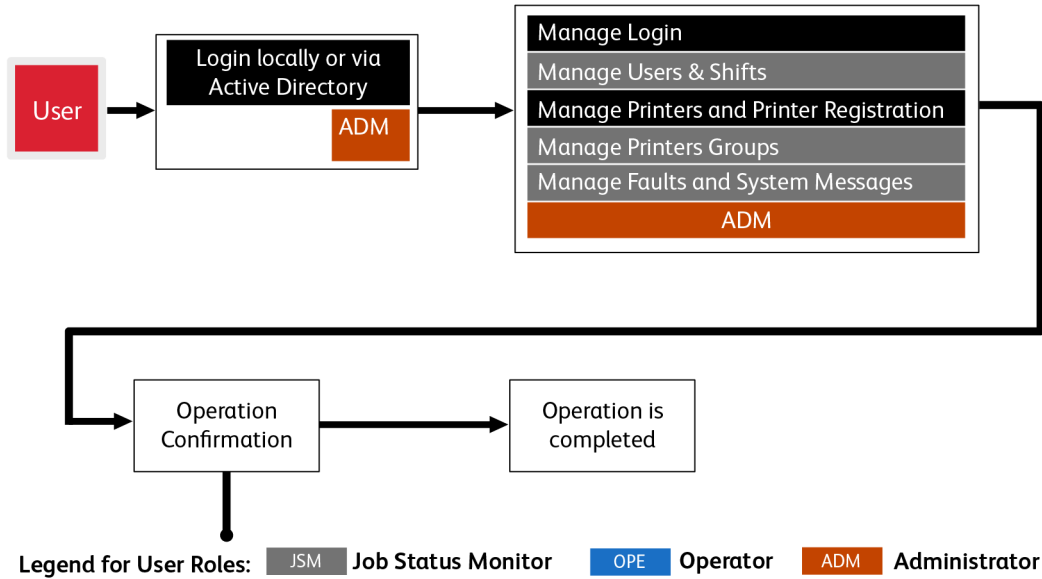
Legend for User Roles: JSM Job Status Monitor OPE Operator ADM Administrator

Figure 2.3 Xerox® FreeFlow® Vision Workflow – View Historical Data from Printers



Legend for User Roles: JSM Job Status Monitor OPE Operator ADM Administrator

Figure 2.4 Xerox® FreeFlow® Vision Workflow – Manage Administrator Tasks



XEROX® FREEFLOW® VISION CLIENT

A Web browser that is compatible with HTML5 and CSS3 is used to connect Xerox® FreeFlow® Vision client. HTTPS connections are required to provide a secure download of the Xerox® FreeFlow® Vision client and secure communication between the client and Xerox® FreeFlow® Vision.

- To enable HTTPS connections, add a TLS/SSL certificate to Internet Information Services (IIS) manager. Follow the instructions in the Windows documentation.
- If necessary, to configure Web browser communication using TLS, refer to browser-specific instructions.

Note: The client retrieves job properties that contain customer file attributes.

Table 2.1 Firewall Configuration

Port	Protocol or Application	Firewall Connection Type
80	HTTP	Inbound Note: The port number depends on the IIS server configuration.
443	HTTPS	Inbound Note: The port number depends on the IIS server configuration.

User Data Protection

LOCAL ENVIRONMENT

Application data stored on the Xerox printer

The following application data is stored on the device, in the persistent storage:

- User and encrypted password information
- Printer and job information

Note: The database is not uninstalled from your local computer automatically. You are prompted to confirm whether you want to remove your data.

3. General Security Protection

User Local Authentication

Xerox® FreeFlow® Vision opens to a login screen.

- Users log in for access to the Xerox® FreeFlow® Vision system.
- After a specified amount of time of inactivity, logged-in users are logged off automatically. The default inactivity timeout is 30 minutes. You can configure the timeout duration, so that you can modify it based on the security requirements of your facility.
- If authentication fails with the Xerox® FreeFlow® Vision software, after five failed login attempts within 30 minutes, the account is locked and cannot be unlocked until 30 minutes is completed.
- If the customer prefers to use Xerox® FreeFlow® Vision without interruption, the customer can uncheck the auto-lockout checkbox. This scenario is useful for shop managers who want to monitor their printers without the need to re-login after a certain duration. An administrator can only check or uncheck this auto-lockout option.

Active Directory Authentication

The login confirmation with Active Directory Authentication goes through the authentication methods of the company.

- Users can use their login credentials of the company.
- Active directory authentication is used to manage user names and passwords.
- Password resets with Xerox® FreeFlow® Vision password control is no longer possible.

After you create each user, ensure that you assign user roles for each user.

The following table defines access levels for each user class. Based on the user login level, the logged-in user has access to the features that are listed in the User Interface Access column.

The description of what is viewable by user class is shown on the User Access screen.

Table 3.1 User Access Levels

Functional Description	User Interface Access	Job Status Monitor	Operator User Access	Admin User Access
Perform administrative functions, including security administration, group management, updates, and licensing	<ul style="list-style-type: none">• Printer setup• Shift setup• License Management• User setup• Printer Group setup• Export Data• Annotation setup	-	-	Yes

Ability to filter the data that is presented	Ability to select the chart type and filter the required information	Yes	Yes	Yes
Access to the live printer view	Full access to the live printer view	Yes	Yes	Yes
Access to change password credentials and create or save customizable views	Access to change password credentials and create or save customizable views of the user.	-	Yes	Yes
Access to the About screen	Access to the About screen, which contains the Xerox copyright and PCD version information	Yes	Yes	Yes

CREDENTIALS ENCRYPTION

When you enter your credentials in the Xerox® FreeFlow® Vision client, the credentials are encrypted.

- SQL user credentials: User credentials are encrypted before they are sent to the Xerox® FreeFlow® Vision server.
- Local user password credentials: If users are authenticated with Xerox® FreeFlow® Vision, the user credentials are encrypted and stored locally.
- Windows Authentication: Microsoft handles the user credentials as part of Windows.

Table 3.2 Firewall Configuration

Port	Protocol or Application	Firewall Connection Type
80	HTTP	Inbound Note: The port number depends on the IIS server configuration.
88	Kerberos	Outbound: User Authentication Note: Port numbers and services depend on the server Active Directory configuration.
389 636 3268 3269	LDAP LDAP SSL LDAP GC LDAP GC SSL	Outbound: Validates Active Directory Groups during the Active Directory authentication configuration. Note: Port numbers and services depend on the server Active Directory configuration.

EMAIL NOTIFICATION

Xerox® FreeFlow® Vision is an email client that connects to a customer email server. You can encrypt email notifications, then connect to a mail server that supports encryption. SSL enables encryption of communications between the notification service and the SMTP server. Encrypted credentials are stored locally.

Table 3.3 Firewall Configuration

Port	Protocol or Application	Firewall Connection Type
25,465,587	SMTP Protocol	Outbound: Sends email notifications Note: The required port number and use of a secure connection depends on the SMTP server configuration.

Xerox® FreeFlow® Vision Printer or Print Server Access

Xerox® FreeFlow® Vision uses SNMP with IPP commands to communicate with the print server. The SNMP public community string on the printer or the print server requires the administrator to enter the information in the printer administration user interface. If the default setting modifies the SNMP public community string on the printer or print server, ensure that the updated setting is registered with FreeFlow® Vision. For more information on updating the SNMP public community string, refer to the *Xerox® FreeFlow® Vision Release Notes*.

The following operations use an unencrypted connection:

- Retrieval of SNMP printer data
- Retrieval of the job accounting information for display purposes

FreeFlow® Vision does not support communication to the print server using secure IPP currently.

Table 3.4 Firewall Configuration

Port	Protocol or Application	Firewall Connection Type
161	SNMP	Outbound: Identifies the print server type during a Printer Destination setup and Certificate Retrieval
80	HTTP	Outbound: Accesses the Xerox® FreeFlow® Vision server
443	HTTPS	Outbound: Accesses the Xerox® FreeFlow® Vision server
631	IPP	Outbound: Communicates to print servers to get the printer job status

User Data in Transit

SECURE NETWORK COMMUNICATIONS

Xerox® FreeFlow® Vision requires you to provide valid credentials to gain access to the features of the application. Authenticated users are allowed to access the features and data using HTTP or HTTPS.

It is the responsibility of the customer to install the certificate on their devices and to enable the server certificate validation on the devices.

USER DATA

Xerox® FreeFlow® Vision has access to printer job names.

Note: Xerox® FreeFlow® Vision does not encrypt the job name.

SQL SERVER CONNECTION

Xerox® FreeFlow® Vision communicates with the SQL server using Java Database Connectivity (JDBC). When the SQL server is configured to use encrypted connections, encrypted communication between Xerox® FreeFlow® Vision and the SQL server is enabled.

Encrypted SQL server credentials are stored locally within the Xerox® FreeFlow® Vision server. To install software on a remote SQL server without SQL server administrator privileges, create an empty database called `Xerox FreeFlow Vision` in the SQL server instance.

Table 3.5 Firewall Configuration

Port	Protocol or Application	Firewall Connection Type
1433	SQL server	Inbound: Receives connections from Xerox® FreeFlow® Vision. Outbound: Communicates with the SQL server database print engine. Note: The port number depends on the SQL server configuration.
1434	SQL Server Browser service	Inbound: Receives connections from Xerox® FreeFlow® Vision. Outbound: Communicates with the SQL server database print engine. Note: The server provides the client with the port number for connection

4. Additional Information and Resource

FreeFlow® Vision Security

SECURITY @ XEROX

We maintain an up-to-date public webpage that contains the latest security information that pertains to its products. Refer to <https://www.xerox.com/security>.

RESPONSES TO KNOWN VULNERABILITIES

We have created a document that gives details of the Xerox Vulnerability Management and Disclosure Policy, which is used in the discovery and remediation of vulnerabilities in the Xerox® software and hardware. You can download this document from: <https://www.xerox.com/information-security/information-security-articles-whitepapers/enus.html>.

Additional Resources

Security Resource	URL
Frequently Asked Security Questions	https://www.xerox.com/en-us/information-security/frequently-asked-questions
Bulletins, Advisories, and Security Updates	https://www.xerox.com/security
Security News Archive	https://security.business.xerox.com/en-us/news/