

FreeFlow®
JMF Service
Version 9.0.10.0
702P01828
August 2013



FreeFlow® JMF Service

User Guide



Prepared by:

Xerox Corporation
Content Development and Language Services - North America
800 Phillips Road
Building 0218-01A
Webster, New York 14580-9791
USA

Copyright © 1996-2013 Xerox Corporation. All rights reserved. Xerox® and the sphere of connectivity design, FreeFlow®, FreeFlow Makeready®, FreeFlow Output Manager®, and FreeFlow Process Manager® are trademarks of Xerox Corporation in the US and/or other countries.

While every care has been taken in the preparation of this material, no liability will be accepted by Xerox Corporation arising out of any inaccuracies or omissions.

Printed in the United States of America.

Other company trademarks are acknowledged as follows:

Adaptec®, the Adaptec logo, SCSISelect®, and EZ-SCSI® are trademarks of Adaptec, Inc.

Adobe PDFL - Adobe PDF Library Copyright © 1987-2009 Adobe Systems Incorporated.

Adobe®, the Adobe logo, Acrobat®, the Acrobat logo, Acrobat Reader®, Distiller®, Adobe PDF JobReady™, and PostScript®, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries. All instances of the name PostScript in the text are references to the PostScript language as defined by Adobe Systems Incorporated unless otherwise stated. The name PostScript also is used as a product trademark for Adobe Systems' implementation of the PostScript language interpreter, and other Adobe products.

Copyright 1987 - 2009 Adobe Systems Incorporated and its licensors. All rights reserved.

Autologic® is a registered trademark of Autologic Information International, Inc.

Compaq® and QVision® are registered trademarks of Novell, Inc. in the United States and other countries.

DEC, DEC RAID, and Redundant Array of Independent Disks are registered trademarks of Digital Equipment Corporation.

Dundas - This software contains material that is (c) 1997-2000 DUNDAS SOFTWARE LTD., all rights reserved.

Imaging Technology provided under license by Accusoft Corporation.

ImageGear © 1996-2005 by AccuSoft Corporation. All Rights Reserved.

Intel® and Pentium® are registered trademarks of Intel Corporation.

Novell® and NetWare® are registered trademarks of Novell, Inc. in the United States and other countries.

Oracle® is a registered trademark of Oracle Corporation Redwood City, California

ScanFix® Image Optimizer and ImagXpress are either registered marks or trademarks of Pegasus Imaging Corp. Copyright © 1997-2008 Pegasus Imaging Corp. All rights reserved.

Sony™ and Storage by Sony™ are trademarks of Sony.

PANTONE™ and other Pantone, Inc. trademarks are the property of Pantone Inc.

Preps™ is a registered trademark of Creo Inc. All rights reserved.

Quark® and QuarkXpress® are registered trademarks of Quark, Inc.

StorageView™ is a trademark of CMD Technology, Inc.

TIFF® is a registered trademark of Aldus Corporation.

Windows®, Windows XP®, Windows Server® 2003, Windows Server® 2008, and Internet Explorer are trademarks of Microsoft Corporation; Microsoft® and MS-DOS® are registered trademarks of Microsoft Corporation.

Portions Copyright © 2001 artofcode LLC.

This software is based in part on the work of the Independent JPEG Group.

Portions Copyright © 2001 URW++. All Rights Reserved.

This product includes software developed by the Apache Software Foundation.

Copyright © 1999-2003 The Apache Software Foundation. All rights reserved.

This software is based in part on the work of Graeme W. Gill.

© Press-sense Ltd. 2002-2007. All rights reserved.

Includes Adobe® PDF Libraries and Adobe Normalizer technology

The Graphics Interchange Format © is the Copyright property of CompuServe Incorporated. GIFSM is a Service Mark property of CompuServe Incorporated.

Portions contain an implementation of the LZW algorithm licensed under U.S. Patent 4,558,302.

Parts of this software Copyright © 2004-2006 Enterprise Distributed Technologies Ltd. All Rights Reserved.

Parts of this software Copyright © 1995-2003, The Cryptix Foundation Limited. All Rights Reserved.

Parts of this software are a SSLv3/TLS implementation written by Eric Rescorla and licensed by Claymore Systems, Inc. All Rights Reserved.

Parts of this software Copyright © 2002, Lee David Painter and Contributors. Contributions made by Brett Smith, Richard Pernavas, Erwin Bolwidt.

Parts of this software Copyright © 1995-2005, Jean-loup Gailly and Mark Adler.

All other product names and services mentioned in this publication are trademarks of their respective companies. They are used throughout this publication for the benefit of those companies, and are not intended to convey endorsement or other affiliation with the publication. Companies, names, and data used in examples herein are fictitious unless otherwise noted. Changes are periodically made to this document. Changes, technical inaccuracies, and typographical errors will be corrected in subsequent editions

Table of Contents

1	Introduction	1-1
	Glossary	1-1
	The purpose of this document	1-1
	Overview	1-2
2	Installation, uninstallation, upgrade, and configuration ..	2-1
	This section describes how to install the FreeFlow JMF Service.....	2-1
	Workstation requirements	2-1
	Minimum Hardware requirements	2-1
	Minimum Software requirements	2-1
	Installation	2-2
	Installation Prerequisites	2-2
	Installation Procedure	2-2
	Group and User Configuration	2-3
	Adding users to the Xerox FreeFlow Common Printer Administrators group	
	2-3	
	Adding users to the Xerox FreeFlow JMF Service Administrators group	
	2-3	
	Uninstallation	2-4
	Upgrading	2-5
	Backup and Restore	2-5
	Backup and Restore commands using Program shortcuts.	2-5
	Backup and Restore using command line:.....	2-6
	Migration	2-6
	Migration (System A to System B)	2-6
	Migration (Operating System upgrade on same system).	2-6
	Installing Patches and Updates	2-7
	Configuration Settings.....	2-7
	Modifying the Job Retention setting	2-7
	Proxy Server settings	2-8
	ReturnQueueEntry message retry/delay settings	2-8
	Configuring the Windows Firewall Settings	2-8
	Configuring Clients	2-9
	Configuring Adobe Acrobat 9 and X	2-9
	Configuring FreeFlow Web Services	2-9
	Adding and Configuring Printers.....	2-10
	Shutdown and Restart	2-11
3	Supported JMF Queries and Commands	3-1
	SubmitQueueEntry	3-1
	Persistent Channels	3-2
	Status Signals	3-2
	ReturnQueueEntry	3-2
	KnownDevices	3-3
	AbortQueueEntry	3-3
	SuspendQueueEntry	3-3

	ResumeQueueEntry.....	3-3
	Status Query	3-3
	Status Queue Query	3-3
	Resource Query.....	3-4
4	Supported CLI Commands.....	4-1
	update-devices	4-1
	shutdown-system.....	4-1
	list-devices	4-2
	list-jobs	4-2
	get-job-attributes.....	4-2
	Displaying Software Version	4-3
5	Troubleshooting	5-1
	Enable Logging.....	5-1
	Printer Connection.....	5-2
6	Limitations	6-1
	Creating JDF Tickets in Adobe Acrobat Professional.....	6-1
7	Web Services supplemental information.....	7-1
	FreeFlow Web Services and Xerox Production Printing	7-1
	JMF Status Signals.....	7-2

Introduction

Glossary

The following is a list of important terms used throughout this document:

- **MIS** -- Management Information Systems. The functional part of a JDF workflow that oversees all processes and communication between system components and system control.
- **Device** -- The component of a JDF workflow part that interprets JDF and executes the instructions.
- **Controller** -- The component of a JDF-based workflow that initiates devices, routes JDF, and communicates status information.
- **Persistent Channel** - A dedicated connection that enables the JMF Service to send JMF Signals to the MIS.
- **Job Definition Format (JDF)** -- A XML-based data format that defines a print job in terms of the products to be created as well as the processes to create those products. JDF provides a container to define a job.
- **Job Messaging Format (JMF)** -- A XML data format based on JDF. It is a protocol that enables components in a JDF workflow to communicate. JMF provides a series of commands and queries such as JDF job submission, queue handling, device capability description, and event notification.

The purpose of this document

The JMF Service User Guide is intended to be used as a general purpose document covering:

- Installation of the software
- Configuration of various supported clients, including:
 - Adobe Acrobat
 - FreeFlow Web Services
- Listing supported queries and commands
- Supported command line interface commands.

For additional information on how to use the supported clients, refer to the client documentation.

Overview

FreeFlow JMF Service implements the JDF Specification Version 1.3. The level of support is described in the FreeFlow JDF Support Specification, Version 9.0 document. It conforms to a subset of the following ICS specifications:

- Subset of IDP ICS Level 1 and 2
- Subset of Base ICS Level 1 and 2

The FreeFlow JMF Service supports JMF clients such as Adobe Acrobat 7, 8, and 9/9.1 Professional, Acrobat X, and FreeFlow Web Services. Configuration of these clients is covered in section 2.3.

The FreeFlow JMF Service submits jobs directly to printers and therefore is considered a device since it is acting as a proxy for the printer that will execute the JDF nodes.

FreeFlow JMF Service provides the following support:

- Accept the SubmitQueueEntry command message
- Accept Status Query message with a subscription for job and printer status updates
- Send Status Signal messages to one or more subscribers listening on different ports or on entirely separate IP addresses.
- Return the modified JDF instance file to the client after the job completes or aborts via the ReturnQueueEntry command message.
- Accept the KnownDevices query message
- Accept the AbortQueueEntry command message
- Accept the StopPersistentChannel command message
- Accept Status Queue Query message
- Accept Resource Query message

Installation, uninstallation, upgrade, and configuration

This section describes how to install the FreeFlow JMF Service.

Workstation requirements

Your workstation must meet the following hardware and software requirements to run the software:

Minimum Hardware requirements

- For Win XP and Vista client systems, the minimum RAM is 2GB in standalone configuration. Free disk space is 500 MB depending on size of jobs sent from the client. The processor should be at least Core 2 Duo 2.0 GHz but OS requirements may require a faster processor.
- In the case where the JMF Service is co-resident with FreeFlow Web Services, the hardware requirements are the same as that required by FreeFlow Web Services application

Minimum Software requirements

- Windows Server 2003 with SP2
- Windows Server 2003 R2 with SP2
- Windows Server 2008 with SP2
- Windows Server 2008 R2
- Windows Server 2012 Standard
- Windows XP with SP2 or SP3
- Windows Vista with SP1 or SP2
- Windows 7 (32 bit and 64 bit)
- Windows 8 (32 bit and 64 bit)

Installation

FreeFlow JMF Service is intended to run on a single host and cannot reside with any other FreeFlow applications except Print Manager and Web Services.

Note

When installing with Web Services, the preferred method is to install JMF Service along with the Web Services application.

FreeFlow Output Manager and FreeFlow Process Manager provide an embedded JMF Service. Do not install FreeFlow JMF Service on those systems.

The logged on user must have administrator rights to install program on a Windows platform. The installation will ask for the following information:

- Installation root directory. The default is "C:\Program Files\Xerox\FreeFlow Print Manager JMF Service". When using a 64-bit operating system, the directory is "C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service"

Installation Prerequisites

The following must be installed **before** you install the software:

- Microsoft .NET Framework 3.5 Service Pack 1

Installation Procedure

Perform the following steps to install the product:

1. Locate the downloaded installation program, FF_JMFService_0.0.10.0_0040_svn15635.exe, and double-click the file.

Note

Ensure you are installing the FFJMF 9.0.10.0 FULL INSTALLER, not a patch.

2. Select a language from the pull-down menu. Click <OK>.
3. Click <Next> at the Introduction screen.
4. At the Software License Agreement screen, select the "I accept..." option to accept the End User License Agreement terms. Click <Next>.
5. At the Choose Install Set screen, select both FreeFlow JMF Service and Printer Registration. Click <Next>.
6. At the Choose Install Folder screen, accept the default install directory or enter an alternate install location. Click <Next>.
7. At the Choose Shortcut Folder screen, select a Shortcut Folder option. Click <Next>.
8. Review the install options at the Pre-Installation Summary screen. Click <Install>.
9. Click <Done> to complete the software installation and reboot the system.

After you reboot the system, under the Start menu "Xerox FreeFlow > JMF Service" the following applications are available:

- Services
- Command Line
- Backup
- Restore

The Services shortcut is used when stopping and starting the FreeFlow JMF Service. The Command Line is used to invoke the FreeFlow JMF Service CLI commands.

If Windows Firewall has been enabled, it may be necessary to configure the Firewall to allow communication with FreeFlow JMF Service. Go to [Configuring the Windows Firewall settings](#)

If the job retention, proxy server settings, or ReturnQueueEntry retry/delay settings need to be configured, go to [Configuration Settings](#)

Group and User Configuration

Before you can use the FreeFlow JMF Service, you must add users to the “Xerox FreeFlow JMF Service Administrators” group and the “Xerox FreeFlow Common Printer Administrators” group.

Adding users to the Xerox FreeFlow Common Printer Administrators group

The FreeFlow Common Printer Administrators group controls what users have permission to add a printer to the system. Only those users that are members of this group can add or edit a printer in the Printer Registration application.

Perform the following to configure the user group:

1. Perform one of the following steps:
 - For **Windows XP, Windows Vista, Windows 7, Windows Server 2003, Windows Server 2008**: Right-click the My Computer icon and select Manage.
 - For **Windows 8, Windows Server 2012**: Open the Start Menu, type **Computer**. Right click on Computer and select Manage.
2. Open the Local Users and Groups folder. Then open the Groups folder.
3. Select “Xerox FreeFlow Common Printer Administrators.”
4. Add users to the group. If necessary, create any specific users that you want to have access to the application first.
5. Close the Computer Management window and login as one of the users added to the group.
6. Perform one of the following steps:
 - For **Windows XP, Windows Vista, Windows 7, Windows Server 2003, Windows Server 2008**: Select Start->Programs->Xerox FreeFlow->Printer Administration->Printer Registration.
 - For **Windows 8, Windows Server 2012**: Open the Start Menu, select Printer Registration
7. At the Installed Products dialog, ensure that the FreeFlow JMF Services check box is selected. Click <OK>.
8. Add one or more production printers. If necessary, refer to the online help for the Printer Registration application for instructions on adding a printer.

Adding users to the Xerox FreeFlow JMF Service Administrators group

FreeFlow JMF Service relies on the underlying operating system security mechanism for authentication. All authenticated users must have an account on the host that FreeFlow JMF Service is running on.

Authorization is enforced through the Command Line Interface (CLI) which must reside on the same host that FreeFlow JMF Service is running on. The CLI uses the credentials associated with

the logged in user for authorization purposes. Only a single access level is supported - "Xerox FreeFlow JMF Service Administrators". Prior to executing any CLI commands, this group must be created and the user associated with it.

Perform the following to configure the user group:

1. Right-click the My Computer icon and select Manage.
2. Open the Local Users and Groups folder. Then open the Groups folder.
3. Select the "Xerox FreeFlow JMF Service Administrators."
4. Add users to the group. If necessary, create any specific users that you want to have access to the application first.
5. Close the Computer Management window and login as one of the users added to the Xerox FreeFlow JMF Service Administrators group.

Uninstallation

Perform the following to uninstall the software:

1. Perform one of the following steps:
 - For Windows 2003: Select [Start, Settings, Control Panel, Add or Remove Programs].
 - For Windows 7/Windows 2008: Select [Start, Settings, Control Panel, Programs and Features].
 - For Windows 8/Windows 2012: Open the Start Menu, type **Control Panel**, and press **Enter**. Select [Programs, Programs and Features].
2. From the list, select [Xerox FreeFlow Authorization Service].
3. Select [Change/Remove].
4. From the list, select [FreeFlow JMF Service <version number>].
5. Select [Change/Remove].
6. At the Uninstall FreeFlow Output Manager window, select [Uninstall]. The process will run.
7. Note
8. If you also want to remove the Printer Registration utility, select [FreeFlow Printer Registration <version number>]. At the Uninstall FreeFlow Printer Registration window select [Uninstall]. The process will run.
9. Make note of the items that could not be removed. You may wish to remove them manually.
10. Select [Done].
11. Close the Add/Remove Programs window.
12. If desired, manually remove the files that were not automatically removed by the uninstaller.
13. Restart your PC to complete the uninstall.

Note

Uninstalling the software will not delete FreeFlow JMF Service setup items, such as created printers, jobs, nor configuration and licensing information. To completely remove these items, delete the directory where the software was installed. Example: C:\Program Files\Xerox\FreeFlow Print Manager JMF Service or C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service for 64-bit operating system.

Upgrading

FreeFlow JMF Service can be upgraded from version 8.0 to version 9.0. The procedure requires that the FreeFlow JMF Service is backed up and the FreeFlow JMF Service is uninstalled.

Note

If you have a version of FreeFlow JMF Service earlier than version 8, upgrade using the “Upgrading FreeFlow JMF Service” procedure found in the 8.0 version of your FreeFlow JMF Service User Guide (p/n 701P49904). Once you have confirmed that you have a working version 8 of FreeFlow JMF Service, follow this procedure to upgrade to version 9.

To backup the JMF Service, invoke the Backup command described in the section “Backup and Restore”.

Uninstall the JMF Service, the Authorization service, and the Printer Registration utility. Go to Uninstallation for instructions.

Install FreeFlow JMF Services per Installation. Perform all configuration subsections to ensure that the proper user groups and users are configured.

If the job retention, proxy server settings, or ReturnQueueEntry retry/delay settings need to be configured and you have not already modified the configuration file, go Configuration Settings.

Backup and Restore

The backup and restore commands allow you to backup the FreeFlow JMF Service for later restore in case of an unrecoverable failure or used as part of a migration from one system to another. Backup will backup printers that are created using the Printer Registration utility and JMF Service configuration information. Backup and Restore can be accessed using either

Backup and Restore commands using Program shortcuts.

- Start->Programs->Xerox FreeFlow->FreeFlow JMF Service >Backup
For Windows 8/2012: Open the Start Menu, select Backup.
A dialog will appear asking the user to specify a backup filename.
- Start->Programs->Xerox FreeFlow->FreeFlow JMF Service >Restore
For Windows 8/2012: Open the Start Menu, select Restore.
A dialog will appear asking the user to specify a restore filename.

Note

When executing either Backup or Restore on Windows Vista, Windows 7, Windows 8, Windows Server 2008, or Windows Server 2012, the command must be “Run as Administrator”. Right click over the command and select “Run As Administrator”.

Backup and restore can be accessed by using the CLI commands. The commands are typed in a Windows command prompt window. The command can also be used in conjunction with Windows Scheduled tasks to create automated backups. When using either Backup or Restore on Windows Vista, Windows 7, Windows 8, Windows Server 2008, or Windows Server 2012, the command prompt must be “Run as Administrator”. When selecting “Command Prompt” from the Start Menu (e.g. Start->All Programs->Xerox FreeFlow->JMF Service->Command Prompt), right click over Command Prompt and select “Run As Administrator”.

Backup and Restore using command line:

- Enter the `jmfsvc_backup` command followed by a fully qualified path to the backup file to be created

Example: `jmfsvc_backup "C:\backups\jmfsvc_backup.zip"`

Note

The command does not require entering a pathname to the backup file. If the pathname is not specified, the backup file is created in the Backups directory of FreeFlow JMF Service installation directory (e.g. `C:\Program Files\xerox\FreeFlow Print Manager JMF Service\Backups` or `C:\Program Files (x86)\xerox\FreeFlow Print Manager JMF Service\Backups`).

The name of the file is in the format `"ffbackup_JMFService_YYYYMMDD_x.zip"` where YYYY is the year, MM represents the numerical month, DD represents the numerical day and x represents the backup number within the given day.

- Enter the `jmfsvc_restore` command followed by a fully qualified path to the backup file to be restored.

Example: `jmfsvc_restore "C:\backups\jmfsvc_backup.zip"`

Migration

The FreeFlow JMF Service can be moved from one system to another system. It can also be moved to an upgraded Operating System where the FreeFlow JMF service is installed. The process involves using the backup and restore commands described in the Backup and Restore section.

Migration (System A to System B)

The following describes the steps to move the FreeFlow JMF Service from the current system (System A) to another system (System B).

1. Start backup for FreeFlow JMF Service 9.0 on System A. Use the backup instructions in the previous section. Copy the backup zip file to a remote media (e.g. remote directory, cdrom).
2. Copy the backed up zip file to a location on System B
3. Install FreeFlow JMF Service 9.0 on System B.
4. Start restore using the backed up zip file.

Migration (Operating System upgrade on same system)

The following describes the steps if the Windows Operating system is upgraded on the same system where FreeFlow JMF Service is installed.

1. Start Backup for FreeFlow JMF Service 9.0. Use the backup instructions in the previous section. Copy the backup zip file to a remote media (e.g. remote directory, cdrom).
2. Upgrade the Operating system. This assumes the contents of the disk are lost during the upgrade process.
3. Install FreeFlow JMF Service 9.0.
4. Copy the backup zip file onto System B. Start restore using the backed up zip file.

Installing Patches and Updates

From time to time it may be necessary to install a software patch to the FreeFlow JMF Service software. This section describes the procedures for installing a patch.

Note

If you have newly installed FreeFlow JMF 9 SP 10 using the Full Installer, it is not necessary to install the SP 10 patch.

In order to install the FreeFlow JMF Service patch, you must be logged in as a user with Windows Administrator rights

1. Double click the executable file (.exe) to start the installation.
2. At the splash screen, select the appropriate language from the pull-down menu and click <OK>.
3. At the FreeFlow JMF Service introduction screen, click <Next>.
4. At the pre-installation summary screen, click <Install>. The installation of FreeFlow JMF Service patch begins.
5. After the installation is complete, ensure that the <Yes, restart my system> radio button is selected.
6. Click <Done>. The system reboots.

Configuration Settings

FreeFlow JMF Service contains settings that can be altered by manually editing a configuration file. There are also steps required to allow communication through the Windows Firewall.

Modifying the Job Retention setting

The JMF Service normally retains completed and aborted jobs for one day. This retention period can be modified by editing the “Jdfjmfgateway.properties” file. Perform the following:

1. Access a text editor application on the system (for example, Notepad).
2. Open the “Jdfjmfgateway.properties” file in the text editor. The file is located in the C:\Program Files\Xerox\FreeFlow Print Manager JMF Service\config directory.

Note

For 64-bit operating system, the directory is C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service\config.

3. Locate the entry “RETENTION_PERIOD=86400” in the file. Change the number setting to the desired retention period. The number value is the total number of seconds that the jobs are retained.
4. Save and close the file.
5. Restart FreeFlow JMF Service.

Proxy Server settings

If a proxy server is required to retrieve files using http file reference by the JMF Service, the settings to the proxy server must be configured.

1. Access a text editor application on the system (for example, Notepad).
2. Open the “Jdfjmfgateway.properties” file in the text editor. The file is located in the C:\Program Files\Xerox\FreeFlow Print Manager JMF Service\config directory.

Note

For 64-bit operating system, the directory is C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service\config.

3. Locate the entry “proxyHost=” in the file. Enter the IP Address or server name for the proxy host following the equals sign.
4. Locate the entry “proxyPort=” in the file. Enter the port number for the proxy host following the equals sign.
5. Save and close the file.
6. Restart FreeFlow JMF Service

ReturnQueueEntry message retry/delay settings

If number of retries or delay between retries for the ReturnQueueEntry message need to be modified, the following settings are configured.

1. Access a text editor application on the system (for example, Notepad).
2. Open the “Jdfjmfgateway.properties” file in the text editor. The file is located in the C:\Program Files\Xerox\FreeFlow Print Manager JMF Service\config directory.

Note

For 64-bit operating system, the directory is C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service\config.

3. Locate the entry “RQERetries =”. Enter a number for the number of retries following the equals sign.
4. Locate the entry “RQERetryDelay =”. Enter a number in seconds for the delay between each retry following the equals sign.
5. Save and close the file.
6. Restart FreeFlow JMF Service

Configuring the Windows Firewall Settings

If the FreeFlow JMF Service is installed on a PC where Windows Firewall is enabled, Windows Firewall must be configured to allow communications to the FreeFlow JMF Service port.

Perform the following to configure the firewall settings:

Note

The following steps may differ depending on the Operating System.

1. Open Windows Firewall and access the utility to Allow a Program through Windows Firewall.
2. Add port 7781 with the name FreeFlow JMF Service.

Note

On Windows Server 2008 R2, Server 2012, Windows 7 and Windows 8, the action is to create a new Inbound Rule within Windows Firewall with Advanced Security setting.

The port number added to the exception must match the value "ServerPort" entry in the "jdfjmfgateway.properties" configuration file.

3. Save changes.

Configuring Clients

The following sections describe how to configure supported JMF Service client applications. Perform only those procedures below for the clients that you will be using to access the FreeFlow JMF Service. The FreeFlow JMF Service can be used simultaneously with multiple clients.

Configuring Adobe Acrobat 9 and X

To configure Adobe Acrobat to submit JDF jobs to FreeFlow JMF Service, configure the printer in Acrobat as follows:

1. Bring up the JDF Job Definitions tool from Adobe Acrobat Professional window:
 - For Acrobat 9: [Advanced, Print Production, JDF Job Definitions]
 - For Acrobat X: [View, Tools, Print Production, JDF Job Definitions]
2. Select "Submission Manager"
3. Select "Add". A "Submission Setup" dialog will appear.
4. Under submission options, select "Convert to a MIME package and submit to a JMF device"
5. Enter the URL as `http://<IP address or hostname of FFPM JMF Service>:7781/[device id]`

Note

If the FreeFlow JMF Service's network address supports both IPv4 and/or IPv6 format, when entering the URL, the IP address must be in IPv4 format. Adobe Acrobat does not support IPv6 literal addresses.

Note

The [device id] refers to the printer name specified in the Printer Registration utility for the printer being accessed by the JMF Service.

Note

Adobe Acrobat XI does not support JMF.

Configuring FreeFlow Web Services

Note

After installing both Web Services and JMF Service there will be two instances of Printer Registration, one from Web Services and one from JMF Service. Depending on which product was installed first, the instance installed second will need to point to the other one for the integration to work properly.

Note

For additional information on integrating Web Services with JMF Service refer to the FreeFlow Web Services Integration Guide (P/N: DWS15V7.0E-02).

To configure FreeFlow Web Services to submit jobs to the FreeFlow JMF Service, perform the following:

1. Log On to Web Services as Print Provider.
2. Go to the [Print Settings] tab, then go to the [Production] tab.
3. Go to [Output Devices] tab.
4. Click on the [Add] button to add a new device.
5. In the [Add Device] dialog box, enter the Device Name.
6. Select [Digital] for the Device Group.
7. Select [FreeFlow – JMF Service] for the Machine Type and click on the [OK] button.
8. From the Output Devices on the left side, select the Device created in Step #7.
9. After selecting the Device, select the [Output Channels] tab on the right side.

Note

Selecting "JMF over HTTP" is recommended.

10. Set the Port to 7781.
11. Select one of the two options based on whether the JDF job type is Intent or Process:
 - Select [Intent_1.2_General] to produce JDF output for Intent JDF jobs.
 - Select [Proc_DigitalPrinting_1.2_General] to produce JDF output for Process JDF jobs.

Note

If [Intent_1.2_General] is selected, be aware that unsupported paper sizes (such as Business Cards) will be rejected by the JMF Service. Use Proc_DigitalPrinting_1.2_General instead.

12. Set the IP Address to the location of the FreeFlow JMF Service PC and click on the [OK] button. A confirmation message pop-up to confirm that the changes have been saved.

Note

If the FreeFlow JMF Service's network address supports both IPv4 and/or IPv6 format, when entering the URL, the IP address must be in IPv4 format. FreeFlow Web Services does not support IPv6 literal addresses.

13. Click on the [Device supports multi-queue system] link. Click on [Available Printers] to show the list of printers available in FreeFlow JMF Service. Select a printer (or printers) and click <ok>. Next window select a default printer and click <save> to save the configuration.

Jobs can now be submitted to the Device and the Queue configured above.

Job submission from FreeFlow Web Services is done in two steps:

1. Log In as Print Buyer and Order the job to be submitted to the FreeFlow – JMF Service.
2. Log In as Print Provider and approve the job to be sent to the FreeFlow – JMF Service.

See the FreeFlow Web Services documentation for instructions on how to perform these operations.

Adding and Configuring Printers

The JMF Service does not maintain its own list of configured production printers. You must use the FreeFlow Printer Registration application to add and configure printers. Once you have added the necessary production printers, you will need to bring up a Command Prompt and use

the following FreeFlow JMF Service CLI command to register the printers into the FreeFlow JMF Service:

- Invoke the CLI **xomupddev** command to retrieve the list of updated printers from the Printer Registration application.

For information on how to use the FreeFlow Printer Registration application, see the online help for that application.

Shutdown and Restart

To shutdown the FreeFlow JMF Service:

- Using Windows Services, select the service named "FreeFlow JMF Service" and invoke command stop. The Windows Services window can be invoked from "Start->All Programs->Xerox FreeFlow Software->FreeFlow JMF Service->Services". For Windows 8, or Windows Server 2012, open the Start Menu, and select Services.
- Alternatively, the FreeFlow JMF Service can be stopped by typing the command "xomshutd" in a Command Prompt window. The Command Prompt window can be invoked from "Start->All Programs->Xerox FreeFlow Software->FreeFlow JMF Service->CommandLine" For Windows 8, or Windows Server 2012, open the Start Menu, and select Command Line.

To restart the FreeFlow JMF Service:

- Using Windows Services, select the service named "FreeFlow JMF Service" and invoke command start. The Windows Services window can be invoked from "Start->All Programs->Xerox FreeFlow Software->FreeFlow JMF Service->Services". For Windows 8, or Windows Server 2012, open the Start Menu, and select Services.

Supported JMF Queries and Commands

SubmitQueueEntry

The SubmitQueueEntry message submits a JDF job to a printer. FreeFlow JMF Service does not validate the JDF against the printer capabilities. If the JDF contains attributes that the printer cannot honor, the printer will do its best to print the job. If the job cannot be printed, it will be aborted and a JMF signal shall be sent to the MIS.

The following types of nodes are accepted:

- Combined Digital Printing
- Product Intent - describes the customer's intention for the final product. FreeFlow JMF Service can handle the Product Intents that can be printed on a digital printer.

The device id required for submission shall be identified in the FreeFlow JMF Service URL, `http://<host>:7781/[device ID]`, or in the device ID (`jmf/@deviceID`) of the JMF message. If both are specified, the latter takes precedence. If the device id is invalid, or the device is not accepting jobs, or the device connection cannot be established, the request shall be rejected and an error code returned.

If the submission contains a Product Intent node, FreeFlow JMF Service shall convert this to a Combined Digital Printing node. Pre-press or post-press intents, if present, are ignored.

Only one PDL file is allowed per JDF job. If the job ticket consists of several components, they all must reference the same PDL file.

The JDF instance file may contain a referenced file. Supported file references are:

```
file://host/path
```

where host is the fully-qualified domain name of the system where the referenced file resides. Host can contain the string "localhost" or can be empty. path is the directory path to the referenced file.

```
cid:content-id
```

content-id identifies a file that was delivered within the MIME multipart message.

```
http://host:port/path
```

where **host** is the fully-qualified domain name of the system where the referenced file resides. **Host** can contain the string "localhost" or can be empty. **Port** contains the port number of the http server. **Path** is the directory path to the referenced file.

Once the submission is accepted, if the job cannot be printed for any reason, it shall be aborted and a JMF signal sent to the MIS.

Persistent Channels

FreeFlow JMF Service sends Status Signals to the MIS through a persistent channel. The MIS sets up a persistent channel by sending a Status Query message with a Subscription element. The subscription identifies a URL which shall be registered for this controller. Once the persistent channel is established, it remains open (across system restarts) until a StopPersistentChannel message is received.

The StopPersistentChannel message unregisters a listening controller from a persistent channel. No more messages are sent to the controller once the command has been issued.

Status Signals

The FreeFlow JMF Service sends a JMF Status Signal to the subscribers for each of the following conditions:

- Job forwarded to printer
- Job at printer, but held waiting for resources (media, finishing)
- Job printing in progress
- Job printing stopped while waiting for resources (media, finishing)
- Printer connection lost
- Job Completed
- Job Aborted

ReturnQueueEntry

The ReturnQueueEntry command returns a jdf file that had been submitted with a SubmitQueueEntry command. This command is sent by the FreeFlow JMF Service after the job completes or aborts. The Audits and JDF/@Status of the JDF that is being processed shall be set to "Completed" and the JDF delivered to the URL as specified by SubmitQueueEntry/@ReturnJMF.

The JMF Service will attempt to send a ReturnQueueEntry command multiple times, until such submission is successfully received by the client. This allows a temporarily down client the time to regain operation. Send attempts will also be made at preconfigured time periods, assuming that it may take some time for the client to resume proper functionality (for example, during a reboot). Both the time period and number of attempts are configurable.

KnownDevices

The KnownDevices query requests information about the devices. For each device, the device status and device ID are returned.

AbortQueueEntry

If the job has not been forwarded to the printer, it will be canceled and a Success status shall be returned in the Response. If the job has already been forwarded to the printer and has not completed printing, a Success status shall be returned in the Response and the Abort request forwarded to the printer.

If the original job submission contains a returnJMF (SubmitQueueEntry/@ReturnJMF), the updated JDF shall be delivered to the specified location.

SuspendQueueEntry

If the job has not been forwarded to the printer, it will be held and a Success status shall be returned in the Response. If the job has already been forwarded to the printer, an error code shall be returned in the Response.

ResumeQueueEntry

If the job has not been forwarded to the printer, it will be released for printing and a Success status shall be returned in the Response. If the job has already been forwarded to the printer, an error code shall be returned in the Response.

Status Query

The controller can be requested to send a list of all jobs in the queue, along with their status and associated attributes. A particular job's information may be returned where QueueEntryID/Job ID is specified in the query.

Status Queue Query

The controller can be requested to send a list of jobs in the queue filtered by status, along with their status and associated attributes. The filter is specified in the query. If there are no jobs having status matching the specified filter, the list of jobs will be empty. If the filter is null, then a list of all jobs, along with their status and associated attributes will be returned.

Resource Query

The controller can be requested to send a list of specified resources currently loaded at the printer.

The JMF Service supports a resource query request for "Media". The JMF Service will return a list of media currently loaded at the printer.

Supported CLI Commands

update-devices

This command will merge printers registered in the FreeFlow Printer Registration tool and the printers used by FreeFlow JMF Service. The result is a list of printers managed by FreeFlow JMF Service based on the printers registered in the FreeFlow Printer Registration tool. Printers that were added using the FreeFlow Printer Registration tool will now be registered into FreeFlow JMF Service. Printers that are deleted using the FreeFlow Printer Registration tool will be deleted from FreeFlow JMF Service if there are no incomplete jobs.

If a printer is removed from the FreeFlow Printer Registration tool and the `xomupddev` command is invoked while uncompleted jobs have been forwarded to the "deleted" printer, the printer will continue to be shown in FreeFlow JMF Service until there are no uncompleted jobs.

Command name:

```
xomupddev
```

Example:

```
xomupddev
```

After the command is entered, the user will be returned to the command prompt.

shutdown-system

This command immediately shuts down the FreeFlow JMF Service.

Command name:

```
xomshutd
```

Example:

```
xomshutd
```

After the command is entered, the user will be returned to the command prompt.

list-devices

This command returns a list of the devices registered in the system.

Command name:

```
xomlisdev
```

Returns:

A list of the printer devices registered with the system.

If no printer names are returned, then there are either no printers listed in the Printer Registration Tool, or the xomupddev command has not been run.

Example:

```
xomlisdev
```

list-jobs

This command lists all the jobs submitted to a specific printer. The printer name is a printer returned from the list devices command.

Command name:

```
xomlisjob
```

Operand:

```
printername: The name of the printer where the  
jobs are submitted.
```

Returns:

List of jobs displayed to the console in the form:

```
printer1:123,printer1:124, ... printer1:nnn
```

Example:

```
xomlisjob printer1
```

get-job-attributes

This command returns the attributes of a job.

Command name:

```
xomgetjob
```

Operand:

```
printer:jobId: The printer name, ":" and the  
job id
```


Options:

`-a:` returns all attributes that exist on the job

Returns:

A list of job attributes in the form “printerName:jobId:attribute-name=value” to the console.

The following message is displayed if the following conditions exist:

Job jobId was not found in the specified queue.

if the specified job does not exist.

Example:

```
xomgetjob -a printer1:123
```

Displaying Software Version

The software version of FreeFlow JMF Service can be displayed by using the `-v` option for any CLI command.

Example:

```
xomlisdev -v
```

Returns:

```
8.0.0.0_827[23442.20090608]
```


Troubleshooting

5

This section describes how to troubleshoot various issues with FreeFlow JMF service.

Enable Logging

The system can be set to log errors based on a user designated level. For example, setting the system attribute to SEVERE will cause only severe errors to be logged. Setting the attribute to FINEST will cause all, even mere information type log data to be recorded.

The available logging attributes are:

- SEVERE
- WARNING
- INFO
- CONFIG
- FINE
- FINEST

Perform the following to enable logging:

1. Access a text editor application on the system (for example, Notepad).
2. Open the “Jdfjmfgateway.properties” file in the text editor. The file is located in the C:\Program Files\Xerox\FreeFlow Print Manager JMF Service\config directory.

Note

For 64-bit operating system, the directory is C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service\config.

3. Locate the entry “com.xerox.gateways.jdfjmf.level” in the file.
4. Add the logging attribute following the entry and a equals sign. For example, “com.xerox.gateways.jdfjmf.level=FINEST”.
5. Locate the entry “JMFDEBUG” and change the value from “false” to “true.”
6. Save and close the file.

FreeFlow JMF Service must be restarted for changed to take effect.

The log files will be placed in the following directory locations:

- C:\Program Files\Xerox\FreeFlow Print Manager JMF Service\logs

Note

For 64-bit operating system, the directory is C:\Program Files (x86)\Xerox\FreeFlow Print Manager JMF Service\logs

Printer Connection

If JMF Service returns an error code of 2, check the connection to the printer. Type the following command:

```
xomgetdev -x printer-state <printer name>
```

If the command returns the value “printer-state=Unknown”, the JMF server cannot communicate to the printer. Actions to resolve the problem are:

- Validate the printer information (i.e. Network address) entered in the Printer Registration Tool is correct.
- Verify that there is communication to the printer from JMF Service. A network ping test for example.
- Verify the printer is operational.

Limitations

This section describes limitations that the user should be aware of when using FreeFlow JMF Service.

Creating JDF Tickets in Adobe Acrobat Professional

When creating a JDF ticket in Adobe Acrobat Professional for submission to FreeFlow Process Manager, for the JDF ticket to be handled properly you must specify the number of pages in the document or the pages in the range.

To specify the number of pages, perform the following:

1. In Adobe Acrobat Professional, select Advanced->Print Production->JDF Job Definitions.
2. Select <New>.
3. In the Create New Job Definition dialog, select “1.2” for the “JDF version” from drop down combo box browse to the desired selection and select <Save>. The file path displays in the Filename text box.
4. Select <Create and Edit>.
5. In the Edit JDF Job Definitions dialog, select <Add Section>.
6. In the “Number of Pages” section, enter the appropriate value.
7. Select <OK>.
8. Select <Close>.
9. Exit Adobe Acrobat Professional.

To specify a range of pages, perform the following:

1. In Adobe Acrobat Professional, select Advanced->Print Production->JDF Job Definitions.
2. Select <New>.
3. In the Create New Job Definition dialog, browse to the desired selection and select <Save>. The file path displays in the Filename text box.
4. Select <Create and Edit>.
5. In the Edit JDF Job Definitions dialog, select <Add Section>.
6. Select <Add File>.
7. In the “Pages to use from the documents” section, select the <Pages in Range> radio button.
8. Enter the appropriate values for the page range in the text boxes.
9. Select <OK>.
10. Select <Close>.
11. Exit Adobe Acrobat Professional.

Web Services supplemental information

The purpose of this chapter is to provide important supplemental information as it applies to FreeFlow JMF Service and supported JMF status signals when used in conjunction with FreeFlowWeb Services.

For additional information on using JMF Service with Web Services, refer to the FreeFlow Web Services Integration Guide.

FreeFlow Web Services and Xerox Production Printing

FreeFlow Web Services is integrated with Xerox production printing technology, allowing the Print Provider to utilize production-level job ticket programming and selection of FreeFlow Digital Front Ends (DFE) for Xerox production printers. There are several methods available in Web Services for communicating to Xerox production printers or other FreeFlow modules. Some of these methods use a new, emerging standard called Job Definition Format (JDF) and a protocol called Job Messaging Format (JMF). Not all Xerox Production Printers natively support JDF/JMF and, instead, another FreeFlow module, such as FreeFlow JMF Service, may be used to submit the job from Web Services to the printer.

When using JDF/JMF, a Web Services Output Device is created in order to route the job to FreeFlow JMF Service. The actual routing of the job is normally assigned as part of the pricing setup of a template or job type.

Since JDF is an emerging standard, not all possible job ticket attributes from Web Services are currently supported by the JDF path. Support currently exists for paper stock selection and copy count. FreeFlow JMF Service does not validate the JDF against the printer capabilities; if the JDF contains attributes that the printer can not honor, the printer will do its best to print the job. If the job can not be printed, it will be aborted and a JMF status signal will be sent to Web Services.

Support for additional JDF attributes is expected to increase as the technology matures.

JMF Status Signals

Refer to your FreeFlow Web Services documentation for information about job status icons.

