GMG FlowConnect
ColorServer/InkOptimizer—Quick Start Guide
Imprint

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1. Getting Started

1.1 About this User Manual

The User Manual contains all important information about GMG FlowConnect to help you learn about and use its basic features.

It is assumed that you already have a basic understanding of XML and XPath expressions. To set up a GMG Connect system on a network, administrator-level knowledge of the network is required. If you want to connect an external workflow system, technical in-depth knowledge of the external workflow system is required. If you do not only want to use a preconfigured workflow connection provided by GMG Color GmbH & Co. KG, but modify such a connection or set up a custom workflow connection, a basic understanding of XSLT transformations and basic programming skills are required as well.

The GMG FlowConnect Help provides a fast and convenient way to look for information. Compared to the printed manual, it gives you the advantage of scrolling through the text in a non-linear fashion, picking up all the information you need.

The GMG FlowConnect software is part of an ongoing developmental process. Please understand that the provided documentation is not always up to date. The latest information can usually be found in the Help.

1.2 Quick Start Guide

The Quick Start Guide helps you get to know GMG FlowConnect. In this tutorial, you will learn to do the following:

- Install GMG Connect for ColorServer/InkOptimizer
- Upload a GMG Connect hotfolder as a Connect Template to GMG ConnectServer
- Set up a job ticket workflow in GMG FlowConnect
- XML Structure of a basic job ticket
- Use a basic job ticket to create a job in GMG FlowConnect and submit it to ColorServer/InkOptimizer
- Monitor the progress from GMG FlowConnect and GMG ConnectManager

If you are a new GMG FlowConnect User, we suggest starting with "Welcome to the GMG Connect System" on page 4 to get a general idea of the program. You can then just follow the instructions step by step, either using the integrated Help or the printed manual.

Of course, your specific workflow will be different from the described situation. For example, the job tickets created by your external workflow system will have other parameters that can be used as job settings. Despite the different situation, you will get the general idea behind the GMG Connect concepts by following this tutorial. Thus, you will find it easy to transfer the provided information to your application.

1.3 GMG Connect

1.3.1 Welcome to the GMG Connect System

Enhanced automation and networking

Increasing automation in the graphic arts industry is leading to a growing demand for a networked, centrally controllable color management solution enabling a cross-platform view of all processes—anyplace, anytime. GMG Connect is a fully featured inbound and outbound communication platform for GMG applications. On the one hand linking GMG software, such as GMG ColorServer/InkOptimizer and GMG ColorProof, to the GMG Connect network, while, on the other hand, enabling the user to easily integrate GMG products into external workflow environments.

With the GMG Connect system, all GMG software products are now able to communicate with each other and with their environment. This greatly increases the degree of automation beyond the use of hotfolders. All process progress can be monitored not only via the respective program interface, but also from a remote location. Proof jobs can be downloaded from the server and current status messages sent back in real time, so that all job information is visible and accessible 24 hours a day, 7 days a week from anywhere in the company's intranet.
1. Getting Started

GMG Connect provides the missing link, uniting GMG’s proofing and color management products to create a central, scalable color management workflow solution. With GMG Connect, you can company-wide control and use GMG installations.

Integration of GMG products into workflow systems

GMG Connect allows for an easy integration of GMG products into other existing workflow environments, enabling a bidirectional data exchange between different workflow components. You can create proof and color management jobs from your workflow application and centrally track all process progress in real time.

1.3.2 Components of the GMG Connect System

The GMG Connect system comprises the following Connect components, the so-called Connectors. Please refer to the documentation of the individual Connectors for further details.

GMG FlowConnect

GMG FlowConnect is the main application in the GMG Connect system. GMG FlowConnect creates jobs from job tickets and uploads them to GMG ConnectServer. After the files have been processed by a connected GMG program or by an external workflow system, GMG FlowConnect automatically downloads the output files and saves them to the target location.

GMG FlowConnect enables a bidirectional machine-to-machine communication between different workflow environments. GMG FlowConnect enhances your level of automation and reduces the need for manual intervention. Thus, an error-free communication can be established resulting in a reliable high quality. Offering a broad choice of configuration options, you can easily customize your jobs on the basis of XML and XMP data.

See also:

- "GMG FlowConnect Program Overview" on page 20

GMG CP04 Connector

GMG CP04 Connector provides the link between GMG ConnectServer and GMG software, such as GMG ColorServer/InkOptimizer or GMG ColorProof 04. Establishing a bidirectional communication between the single software components, GMG CP04 Connector is able to upload and download job information in real time.

See also:

- "CP04 Connector Program Overview" on page 14

GMG ConnectServer

The centerpiece of GMG Connect is GMG ConnectServer, a server application providing a network interface for the Connectors. GMG ConnectServer centrally administers all profiles, templates, processing jobs and status information. Thus, it constitutes the data storage and control center for all information exchange.

Running as a background application, GMG ConnectServer can also monitor other Connectors at remote locations within the network. In case you have multiple ColorServer/InkOptimizer or ColorProof installations, GMG ConnectServer will perform an automatic load balancing for a faster turnaround of data, saving valuable time and resources.

GMG ConnectManager

GMG ConnectManager is a utility program that monitors all connectors and manages the application data on GMG ConnectServer such as Connect templates or color profiles.

See also:

- "Monitoring the Job Status in GMG ConnectManager" on page 32

1.3.3 GMG Connect for ColorServer/InkOptimizer

GMG Connect for ColorServer/InkOptimizer allows for a seamless integration of GMG ColorServer and/or GMG InkOptimizer into 3rd party workflow systems. To provide you with an easy-to-understand example flow, the present documentation focuses on GMG ColorServer. The configuration is, however, identical for both ColorServer and InkOptimizer.
Fig. 1 Components of GMG Connect for ColorServer/InkOptimizer.

The flowchart illustrates the different components of GMG Connect processing a PDF file. First, an XML job ticket is created by an external workflow system and dropped into a hotfolder (1). The input PDF is also dropped into the same or a separate hotfolder (2), as specified in the job ticket. GMG FlowConnect workflows (3) monitor the assigned hotfolders. As soon as a new job ticket is detected, a job is created and uploaded to GMG ConnectServer (4). The job settings are defined by a template and the job ticket.

The GMG CP04 Connector downloads the job (5) and forwards it to GMG ColorServer (6). Now the PDF is color managed as defined in the template / job ticket. The output PDF is temporarily saved on the computer ColorServer is installed on.

Completing the operating cycle, the output PDF is sent back to the FlowConnect computer via the ConnectServer, as indicated by the arrows pointing in the opposite direction. The output PDF is saved to the target folder (7) as specified in the job ticket.

GMG Connect for ColorServer/InkOptimizer was designed to fit many different needs. Therefore, it is completely up to you and your requirements whether to install all components on the same computer or run GMG FlowConnect and GMG ColorServer on two different computers, as shown in the illustration (8). The only prerequisite is that GMG CP04 Connector and GMG ColorServer must be run on the same computer.

1.4 Installation Guide

1.4.1 Computer Configuration

The following system requirements are applicable to GMG FlowConnect, GMG ConnectServer, and GMG ConnectManager.

Please see the separate documentation for further information on the system requirements for GMG programs associated with the Connect system such as ColorServer/InkOptimizer. The corresponding Connector, for example, GMG CP04 Connector, needs to be installed on the same computer.

Minimum System Requirements

The following requirements must be met by all computers connected to the Connect system.

**Computer:** Intel® compatible CPU, 2 GHz, 1 GB RAM, 20 GB hard disk drive

**Hardware components:** 10 Mbit network connection

**Operating system** (32 bit or 64 bit):
- Windows 7 Professional
- Windows Vista Business or Ultimate
- Windows XP Professional Service Pack 3 or later

**Software components:** Microsoft Internet Explorer 6.0 or higher
User rights: Power User, under Windows Vista: Administrator (Full administrator rights are always required for installation.)

Recommended System
GMG recommends the program to be run on a computer meeting the following requirements to ensure the maximum performance from GMG FlowConnect.

The following requirements must be met by all computers connected to the Connect system.

Computer: Intel® Core™ Duo or 2 Quad, 2.4 GHz, 2 x 4 MB Level 2 (L2) cache, 2 GB RAM, 100 GB - 10.000 U/min hard disk drive with optimized performance configuration (RAID 0 system)

Hardware components: 1 Gigabit network connection

Operating system (32 bit or 64 bit):
- Windows Server 2008
- Windows Server 2008 R2
- Windows Server 2003 Service Pack 2 or later. Windows Server 2003, 32 bit version requires also to install Hotfix Package KB923336 (file name WindowsServer2003-KB923336-x86-xxx.exe; where xxx is a placeholder for the language version of your operating system). The hotfix is available on the Microsoft website.

Software components: Microsoft Internet Explorer 6.0 or higher

User rights: Power User, under Windows Vista: Administrator (Full administrator rights are always required for installation.)

1.4.2 Program Installation

Installing GMG FlowConnect

Note: The GMG FlowConnect installer offers an update functionality. You do not need to uninstall an existing version before installing the new version.

Note: Please check the system requirements before starting the installation.

Note: Before installing the software, please make sure you are logged on as administrator with full administrator rights.

Note: A temporary license will be installed together with GMG ConnectServer. The program license needs to be activated for permanent use. You will need to install all licenses (for all Connect products and features) onto the computer where GMG ConnectServer is installed.

The GMG FlowConnect installer comprises all components you will need on the host or server computer. Depending on your setup, you can select the components you will need separately for each computer. For example, a standard configuration would be:

- Install the Connector for the GMG program you want to connect with, for example, GMG CP04 Connector on the same computer as the GMG program, for example, ColorServer/InkOptimizer.
- Install GMG FlowConnect to a separate computer.
- If your Connect system uses only the two components, that is, GMG FlowConnect as a source to generate jobs and the connected GMG program as a target to process jobs, install GMG ConnectServer on the same computer as GMG FlowConnect. The same configuration is recommended if you are using an external workflow system and one target program instance you want to connect with.
- If you want to use multiple instances of GMG FlowConnect (for example, for multiple workflow systems) or of the target GMG program (for example, for load balancing), install GMG ConnectServer on a separate server accessible to all computers.
- It is recommended to install the server administration tool GMG ConnectManager on all computers in the Connect system, as you will then be able to monitor GMG ConnectServer from any computer in the system.
• Of course, you could also install all components on the same computer and connect to localhost, for example, for test purposes. You could also use this configuration for connecting an external workflow system, but using two computers (one for the workflow system, one for the GMG program) is recommended to minimize the computer load.

See also:
• "Software Activation" on page 10

How to install the new version

Note: Make sure no Microsoft system updates are running in the background before starting the setup. This could lead to an installation failure.

Note: Each GMG program you want to connect with requires a specific Connector program, for example, GMG CP04 Connector is required for connecting to the Connect system. However, installing this feature requires that the target GMG program, for example, ColorServer/InkOptimizer is already installed on the computer. Install the target GMG program first before installing the Connector. Otherwise, the installation will be canceled automatically by the installer.

Note: Even if the installer appears to be unresponsive, it is still working in the background. Do not cancel the installation, end the process, or restart the computer until the installation is finished.

1. You can install the program directly from the purchased DVD. If you have downloaded the program from the GMG website, extract all files from the ZIP archive, and then copy all extracted files into a local directory.

2. Double-click the executable setup file (FlowConnectSetup._xx.xx.xx.xx.exe; "xx.xx.xx.xx" being a placeholder for the current build number).

3. Follow the instructions of the installation assistant.
4. (Optional) Under **Setup Type**, you can select the **Custom** option if you want to distribute the Connect components among multiple computers. If you want to install all components, select **Complete**.

5. (Optional) Deselect all components you do not want to install on the computer. For example, if you want to install only GMG FlowConnect, you can deselect all other features.

6. Please wait while the installer is running. The installer needs to extract the installation package, install the program, and copy all application data to the hard disk. These actions may take a while. The installer might appear **unresponsive** during the installation. This is considered to be normal behavior and does not impair the installation success.

7. Restart the computer when you are prompted to do so. The installation procedure will be automatically resumed after the restart.
1.4.3 Software Activation

You will need to activate the product by installing a license file on the computer where GMG ConnectServer is installed. A central license management is handled by the server.

Note: A temporary license will be installed together with GMG ConnectServer. The program license needs to be activated for permanent use. You will need to install all licenses (for all Connect products and features) onto the computer where GMG ConnectServer is installed.

When running the setup, a temporary license will be automatically installed. Please start the activation process directly after the software installation, to make sure that your license file will be available when the temporary license expires.

Software activation is the process of physically installing a license file for the software you purchased so that it becomes active and ready to use on your computer. The GMG Software Activation tool creates a unique Activation Code you will need to send to GMG Color GmbH & Co. KG via e-mail to request a license. In turn, you will receive a license file with respect to the activation code.

Note: The license file can be issued within 2-3 business days upon receipt of your e-mailed activation code. If you have not received an e-mail after this time, please check your firewall and spam filter configuration.

The activation code and the license file are valid only for a specific computer. If you want to transfer the program to a new computer, please deactivate all licenses on this computer before uninstalling the program. You will then need to create a new activation code and request a new license file for the new computer.

How to generate an activation code

1. Click GMG Software Activation in the Windows start menu.
   The GMG Software Activation will be started.
2. Click the Order tab.
3. Enter the order ID or product name and your name and address.
4. Click Send or click Copy to copy the Activation Code to the clipboard and paste it into an e-mail directed at "license@gmgcolor.com".

You will receive an e-mail with a license file.
1. Getting Started

How to activate the product

1. Click **GMG Software Activation** in the Windows start menu. The **GMG Software Activation** will be started.
2. Click the **Order** tab.
3. Click the **Open** button and load the license file.

![Image of license file loading process]

All available licenses will be listed, together with the expiration date.

After activation, the product will be ready to use on your computer.

How to deactivate the product

Note: The deactivation process **cannot** be undone. After deactivating the license, you will **not** be able to run the program anymore before ordering and installing a new license file as described in the preceding text. Entering the password is intended to prevent an unintentional deactivation.

1. Click **GMG Software Activation** in the Windows start menu. The **GMG Software Activation** will be started.
2. Click the **Deactivate** tab.
3. Select a license from the list and click **Deactivate**.
4. Enter "**Confirm Deactivation**" as the password for the deactivation. A file documenting the deactivation process will be automatically generated by the **GMG Software Activation** tool.
5. Send an e-mail with the deactivation code and the attached deactivation file directed at "license@gmgcolor.com".
6. Repeat steps 3 to 5 for all licenses you want to deactivate on this computer.

After deactivation, you can uninstall the program on the old computer, install the program on the new computer, and request a new license for the new computer.

1.5 First Steps

1.5.1 Starting the Software

Note: Make sure you have activated the software by installing a valid license file and the corresponding Windows service is running on all computers in the Connect system.

Note: Make sure GMG ConnectServer and all **Connectors** you want to connect to, for example, ColorServer/InkOptimizer, and all **services are running** on their respective computers in the Connect system. Otherwise, GMG FlowConnect might not be able to connect to the system. For further information, please see the separate documentation on the program you want to connect to.

How to start GMG FlowConnect

- Double-click the **GMG FlowConnect** program icon on the Windows desktop or click **GMG FlowConnect** on the Windows **Start** menu.
  The program verifies the license information via the corresponding Windows service and then starts the program.

See also:

- "Software Activation" on page 10

1.5.2 First Things to Do

After the first start of the application, the main GMG FlowConnect window is empty. This is because no workflows have been configured yet. If you had a previous version installed, your existing workflows printers will show up automatically.
Before you can create a workflow, you will need to do the following:

1. Start all Connectors and the corresponding Windows services on all connected computers. For example, ColorServer/InkOptimizer and GMG FlowConnect.

2. Establish a connection between each Connector and GMG ConnectServer. See chapter "Server Connection and GMG ConnectManager" on page 33.

3. In GMG CP04 Connector, upload a Connect template and associated application data files such as color profiles to GMG ConnectServer. See chapter "Uploading ColorServer/InkOptimizer Hotfolders as Templates to ConnectServer" on page 16.

4. In GMG FlowConnect, you can then import or create a new workflow. See chapter "Creating a New FlowConnect Workflow" on page 21.

1.5.3 Services

The services described in this chapter need to be run in the background for a proper operation of the Connect system. The column If stopped in the following tables lists typical problems related to stopped services, for an easier identification of what causes the problem.

Windows services

Depending on your system configuration, the Windows services need to be run on different computers in your system, see the column Connector in the following tables. For example, the GMG FlowConnect Service must be run on the same computer as GMG FlowConnect, whereas the Sentinel RMS License Manager service must be run on the same computer as GMG ConnectServer.

If a Windows service has been stopped for any reason, you can manually restart it in the Windows operating system.

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
<th>Connector</th>
<th>If stopped</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMG FlowConnect Service</td>
<td>Uploads data to and downloads data from GMG ConnectServer.</td>
<td>GMG FlowConnect</td>
<td>Error when starting GMG FlowConnect. Other Connectors can still connect to GMG ConnectServer.</td>
</tr>
<tr>
<td>GMG Connect Service</td>
<td>Runs the GMG ConnectServer and connects all Connectors in the system.</td>
<td>GMG ConnectServer</td>
<td>General server error, Connectors cannot connect to GMG ConnectServer.</td>
</tr>
</tbody>
</table>
1. Getting Started

Service Description Connector If stopped
Sentinel RMS License Manager Provider of the service: SafeNet, Inc. Manages and validates program licenses. Required for running GMG Connect components. As other programs (from other providers than GMG) might also use Sentinel RMS License Manager service, it is not recommended to manually stop the service. GMG ConnectServer General license error, no license found.

How to manually restart a Windows service

The process and user interface might be slightly different under different operating systems. For further information, please refer to the Windows documentation provided by Microsoft.

1. In the Windows operating system, open the Services window.
2. Select the service you want to restart, for example, GMG FlowConnect Service.
3. Click Start the service.

GMG services

You can restart or stop GMG services from the corresponding GMG application, for example, the CP04 Connector Service from GMG CP04 Connector. For further information, see the documentation provided for the application.

<table>
<thead>
<tr>
<th>Service</th>
<th>Description</th>
<th>Connector</th>
<th>If stopped</th>
</tr>
</thead>
</table>
2. **CP04 Connector Program Overview**

GMG CP04 Connector is the interface between GMG ConnectServer and GMG ColorServer/InkOptimizer/ColorProof 04. It can be used to upload Connect templates of the following types:

- **ColorServer 4.6 for PDF**
- **ColorServer for Images**
- **ColorProof 04**

GMG ColorServer/InkOptimizer or GMG ColorProof 04 needs to be run on the same computer as GMG CP04 Connector. The GMG CP04 Connector service is started automatically in the background when the ColorServer/InkOptimizer application is started by the user. If the GMG CP04 Connector application is started before ColorServer/InkOptimizer, it will remain inactive until ColorServer/InkOptimizer has been started.

![Fig. 3 Main program window.](image)

The main GMG CP04 Connector window is divided into the two main views **Templates** and **System** view. You can switch from one view to another by clicking the appropriate button on the navigation panel (1) on the left side of the main program window.

On the toolbar (2), you can click the **Start** button to start the GMG CP04 Connector service. The left side of the window shows the **hotfolder** configuration of the running ColorServer/InkOptimizer instance (on the same computer).

The right side shows the **templates** readily available on GMG ConnectServer.

You can select a **hotfolder** from the left side. Upload the selected hotfolder from your computer to GMG ConnectServer by clicking the **Upload** button right in the middle between the two sides of the window. After the upload, the **hotfolder** will appear, now as a GMG Connect **template**, on the right side of the window.

You can manage (and delete) templates in the separate program GMG ConnectManager.

### 2.1 Connecting GMG CP04 Connector to GMG ConnectServer

**Note:** Make sure the **computer** on which GMG ConnectServer is installed and the Windows service **GMG Connect Service** are running.

**Note:** Changes to the server connection settings will require a restart of the **CP04 Connector Service**.

**How to connect GMG CP04 Connector to GMG ConnectServer**

1. Start the GMG CP04 Connector application from the Windows Quick Launch Bar (right mouse click > **Properties**).
2. On the navigation panel on the left, click **System**.
3. Under **Network Settings**, enter the IP address of the computer on which GMG ConnectServer is installed as the **Server Address** and enter the **Server Port**.

![Network Settings](image)

4. Click **Apply** to confirm the settings. A message box will inform you that **CP04 Connector Service** will be restarted.

### 2.2 Creating Connect Templates from ColorServer/InkOptimizer Hotfolders

ColorServer/InkOptimizer hotfolders can be uploaded as GMG Connect **templates** to create jobs from job tickets in GMG FlowConnect. Similar to a hotfolder, a GMG Connect template holds all parameters to process a job including color management rules, printer, print medium, label information, and so on.

![Template upload to ConnectServer](image)

**Fig. 4 Template upload to ConnectServer.**

Hotfolders from ColorServer/InkOptimizer are uploaded as templates to GMG ConnectServer via GMG CP04 Connector.

**About hotfolders and templates**

Technically speaking, GMG FlowConnect creates **manual** jobs in ColorServer/InkOptimizer. The ColorServer/InkOptimizer hotfolders uploaded as templates are **not** used for processing. The original hotfolder and the uploaded template are two completely separate entities. For example, you could change the hotfolder settings after the upload. These changes would **not** affect the uploaded template.

A **copy** of all application data referenced in the hotfolder such as color profiles will also be uploaded to the server. Thus the uploaded templates are compatible with other ColorServer/InkOptimizer installations (on a separate computer), where the original source files might not be available.

(PDF-to-PDF, GMG ColorServer: Jobs sent to a ColorServer/InkOptimizer instance will be shown in the job list of the **first** PDF-to-PDF or ColorServer hotfolder on the hotfolder list in ColorServer/InkOptimizer. The settings of this hotfolder are **ignored**. Therefore, at least one PDF-to-PDF hotfolder must be available in the target ColorServer/InkOptimizer instance for **ColorServer 4.6 for PDF (PDF-to-PDF)** templates and one ColorServer hotfolder for **ColorServer for Images (ColorServer)** templates.)
Tip: If you want to upload multiple connect templates with similar settings you can do so very easily by uploading a ColorServer/InkOptimizer hotfolder, modifying, renaming, and saving the same hotfolder in ColorServer/InkOptimizer, uploading the hotfolder again, and so on. A new template will be generated each time you upload the hotfolder under a new name.

2.3 Communication between GMG CP04 Connector and GMG ConnectServer

Hotfolders from ColorServer/InkOptimizer need to be uploaded to GMG ConnectServer only once, as a one-time setting.

GMG CP04 Connector must run permanently in the background serving as an interface to connect ColorServer/InkOptimizer via GMG ConnectServer to GMG FlowConnect. GMG CP04 Connector must run on the same computer as ColorServer/InkOptimizer.

If you use multiple ColorServer/InkOptimizer instances, you need to run one instance of GMG CP04 Connector on each computer.

Tip: You can start and stop the GMG CP04 Connector directly from the Windows taskbar without opening the GMG CP04 Connector window. A simple closing of the window does not mean the service is stopped or terminated.

2.4 Uploading ColorServer/InkOptimizer Hotfolders as Templates to ConnectServer

For further information on how to create or import PDF-to-PDF hotfolders in ColorServer/InkOptimizer, please see the separate PDF-to-PDF help or manual.

How to upload a hotfolder from ColorServer/InkOptimizer to GMG ConnectServer


2. Required only for the tutorial: From the All to CMYK.zip hotfolder archive in the hotfolder subfolder (default path: c:\Colorproof\Hotfolders\All to CMYK.zip), import any hotfolder template, for example "All to ISOcoatedv2-39L TAC330".

3. Start GMG CP04 Connector from the Windows Start Menu.
   The GMG CP04 Connector service is started in the background. The GMG ColorProof Connector icon appears in the notification area of the Windows taskbar.

4. Double-click the icon in the taskbar to start the program or right-click the icon selecting Properties from the context menu.
   The GMG CP04 Connector main window opens.
5. Your current ColorServer/InkOptimizer hotfolder configuration is immediately scanned. All hotfolder names and types are listed on the left side of the main window. For example, the template type PDF2PDF_CS46 means that the template has been generated from a PDF-to-PDF hotfolder in ColorServer 4.6.

6. You can double-click the hotfolder to check the hotfolder parameters, for example, color profiles used by the hotfolder.

7. Click the **Upload** button in the **Template Properties** dialog box to upload the shown hotfolder to GMG ConnectServer.
8. Alternatively, you can directly select a **hotfolder** from the hotfolder list on the left side of the main window. Upload the selected hotfolder from your computer to GMG ConnectServer by clicking the **Upload** button right in the middle between the hotfolder/template lists.

After the upload, the **hotfolder** will appear, now as a GMG Connect **template**, on the template list of GMG ConnectServer.

9. Again, you can double-click the **template** to check the template parameters, for example, default color profiles used by this template. As you can see, the template parameters are derived from the hotfolder settings. Application data file names are listed without a file path, as all files used by the hotfolder have been **uploaded** to GMG ConnectServer.
The status of GMG ConnectServer can always be checked in GMG ConnectManager. On the Standards > Templates tabbed page, you can see the uploaded hotfolder "All to ISOcoatedv2-39L TAC330".

To view the uploaded profile(s), click on the Profiles tab.

All profiles used by the template are automatically uploaded to the server. For example, the screenshot shows all available RGB-to-CMYK separation profiles. Local copies of application data files (used by the hotfolder) are **not** used by the template.
3. Setting up FlowConnect

3.1 GMG FlowConnect Program Overview

With GMG FlowConnect, you can conveniently use, configure, and control GMG color management and proofing from an external software system. As all job progress is streamlined in one central place, there is no time consuming switching between your main workflow application and GMG software.

How does this communication work?

Technically speaking, the external programs submit XML-based job tickets via GMG FlowConnect hotfolders. As soon as a GMG FlowConnect workflow detects a job ticket in a hotfolder assigned to this workflow, a job is created in GMG Connect.

Using a bidirectional machine-to-machine communication, GMG FlowConnect delivers a fast feedback, sending all desired job information to the external system via customizable XML log files, e-mails, or by running scripts.

You can use any desired XML format—from different sources with different syntax and even XMP image metadata—to set up jobs in GMG Connect, allowing for a smooth automation of even highly variable job requirements.

Many workflow systems configure GMG FlowConnect workflows automatically, without any need for manual configuration. If you have a workflow solution that does not support FlowConnect out of the box, you can customize the software to suit your requirements. To set up individual workflows, you need to define XSL transformations and XML files. GMG FlowConnect makes use of very common and widespread standards such as XML, XSLT, and Regular Expressions. If you are familiar with these standards, you will be able to configure GMG FlowConnect without much effort.

Fig. 7 Main program window of GMG FlowConnect
3. Setting up FlowConnect

The main GMG FlowConnect window is divided into the four main views Jobs, History, Workflows (see "Workflows") and (see "System"). The screen shot shows the Workflows view. You can switch from one view to another by clicking the appropriate button on the navigation panel (1) on the left side of the main program window.

The Jobs view displays all jobs in progress until they are finished. The finished jobs are moved to the History view, where they can be sorted and filtered according to different criteria or just deleted (either manually or automatically).

The Workflows view displays all workflows (2). In the example screen shot, several workflows dedicated to different workflow systems are defined. The status of a workflow is displayed in the Status column (3). The workflow configuration is saved locally on the computer where GMG FlowConnect is installed.

The System view provides you with global program settings such as the network settings and system- and error log. The menus in the menu bar (4) refer to the view with the same name, for example, the Workflow menu lists all commands related to configuring workflows. The toolbar provides quick access to often-needed software features such as setting up or starting a workflow. For an introduction of the purpose and features of the views, please follow the links.

3.2 Connecting GMG FlowConnect to GMG ConnectServer

Note: Make sure the computer on which GMG ConnectServer is installed and the Windows service GMG Connect Service are running.

Note: Changes to the server connection settings will require a restart of the Windows service GMG FlowConnect.

How to connect GMG FlowConnect to GMG ConnectServer

1. Start GMG FlowConnect from the Windows Start Menu.
2. On the navigation panel on the left, click System.
3. Under Network Settings, enter the IP address of the computer on which GMG ConnectServer is installed as the Server Address and enter the Server Port.
4. Click Apply to confirm the settings. A message box will inform you that the Windows service GMG FlowConnect will be restarted.

3.3 Creating a New FlowConnect Workflow

A hotfolder defines the input folder for incoming files. To suit different workflow systems, GMG FlowConnect offers two different kinds of workflows: Job Ticket Workflows and Image Workflows. In a Job Ticket Workflow, an incoming job ticket is recognized by the program and the program then searches for the corresponding image file. In an Image Workflow, it is the other way round: An incoming image file is recognized and the program looks for the corresponding job ticket.

In the following, we will create a Job Ticket workflow for a basic PDF-to-PDF job ticket from a PDF-to-PDF ColorServer hotfolder template.

Prerequisites for the following steps:

- ColorServer/InkOptimizer installation with at least one PDF-to-PDF hotfolder
3.3.1 Folder Structure Required for the FlowConnect Sample Workflow

For the tutorial, you will need the following folder structure on the c drive on the computer where GMG FlowConnect is installed (shown in Windows Explorer).

All folders are subfolders of "c:\Data\". Please set up this folder structure now before proceeding with the tutorial.

The following table explains the purpose of each folder. It also mentions for which sample files the folders are intended. You do not need to worry about these things now, but you might want to refer to the information later.

You will find the input PDF and job ticket in the tutorial folder (default path: C:\Program Files\GMG\Connect\Documentation\Tutorials.

Tip: If you encounter any problem you cannot immediately solve when following the instructions of the tutorial, you can import the GMG FlowConnect workflow provided in the tutorial folder: FlowConnect Workflow PDF-to-PDF.fcw. You can then try to reproduce the steps required to set up the workflow on your own.

<table>
<thead>
<tr>
<th>Folder</th>
<th>Short description</th>
<th>See also</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC_Jobticket_PDF</td>
<td>The input folder for the job ticket. You will need to copy the sample file Job Ticket.xml into this folder in a later step. The file name of the job ticket is arbitrary and can be changed.</td>
<td>&quot;Setting up a Hotfolder on page 22</td>
</tr>
<tr>
<td>FC_Input_PDF</td>
<td>The input folder for the PDF. You will need to copy the sample file PDF-AdobeRGB.pdf into this folder in a later step. The file path is defined in the job ticket.</td>
<td>&quot;Job Ticket&quot; on page 24</td>
</tr>
<tr>
<td>FC_Output_PDF</td>
<td>The output folder for the processed PDF. The output file named PDF-CMYK-39L.pdf will be sent to this folder by GMG FlowConnect. The file path is defined in the job ticket.</td>
<td>&quot;Job Ticket&quot; on page 24</td>
</tr>
<tr>
<td>FC_Jobticket_PDF_Error</td>
<td>Error folder for job tickets that generate error jobs and will not be processed. The folder path is defined in the Job Ticket Workflow &gt; Report Settings &gt; Error Handling.</td>
<td>&quot;Setting up an Error File Folder&quot; on page 27</td>
</tr>
</tbody>
</table>

3.3.2 Setting up a Hotfolder

Note: Make sure the computer on which GMG ConnectServer is installed and the Windows service GMG Connect Service are running.

Note: Make sure the GMG FlowConnect Service is running on the same computer as GMG FlowConnect.

You can assign any number of input folders (referred to as hotfolders) to a single workflow. Each file physically present in a hotfolder and passing the file filter of a workflow automatically generates a separate job and is processed as specified in the Job Settings.

Note: It is not recommended to share the same hotfolder with multiple workflows, unless each workflow uses different file name filter settings, as this can lead to a data conflict between the workflows.

Note: It is advisable to backup input files to a separate hard disk drive, and delete the files automatically after a certain amount of time has passed, to avoid that the maximum capacity of the hard disk is reached, and all following jobs are stopped.

How to set up a hotfolder

1. Start GMG FlowConnect from the Windows Start Menu.
2. Click the Workflows button on the navigation panel on the left of the main window.
3. Setting up FlowConnect

4. Click the **Input Settings** button on the navigation panel on the left side of the **New Job Ticket Workflow** dialog box.

5. Type any name into the **Workflow Name** box.

6. Click the **Import Folder Path** button on the right side of the **Folder List**.

7. Click the browse button on the right side of the folder path you want to set up or edit.

8. Browse to the desired folder, or create a new folder, and confirm by clicking **OK**. The selected folder is added to the **Folder List**.

9. If you want to assign multiple hotfolders to the same workflow, repeat steps 6-8.

10. You can delete hotfolders by clicking the **Delete Folder Path** button on the right side of the **Folder List**.

### 3.3.3 Defining the Workflow Input Settings

Like other GMG products, GMG FlowConnect is hotfolder based. Each incoming file in a hotfolder assigned to a workflow automatically creates a FlowConnect job. In a **Job Ticket Workflow**, a **job ticket** will create a FlowConnect job as soon as it is detected in a hotfolder.

To make sure that only valid job ticket files are processed, you can set up a **File Name Filter** for the job ticket. Only files with a matching file name will create a job.

The **XSLT** defines how the **job ticket** is interpreted by the program. You can use XSLT to transform job tickets from 3rd party systems into a format that can be processed by GMG FlowConnect. You can also use a “linear” XSLT, as in this tutorial, that does not transform the job ticket at all.

(In an **Image Workflow**, you would need to set up a **File Name Filter** and **XSLT** for the **image file**.)

#### How to define the hotfolder input settings

1. Click the **Input Settings** button on the navigation panel on the left side of the **New Job Ticket Workflow** dialog box.

2. Enter a **File Name Filter** pattern, for example, "*.xml" to accept only files with an xml file name extension.

3. Select the **Job Ticket XSLT** that will be used for converting incoming job tickets into manual ColorServer/InkOptimizer jobs.

   In the tutorial, the job ticket parameters will be processed "as is", that is, the default XSLT, which does not transform the job ticket at all, can be left unchanged.

4. Select a **Variable Replacement** option.

   In the tutorial, the default option **Replace variables after transformation** can be left unchanged. (As the default XSLT does not transform the job ticket, it does not matter, whether the variables are replaced before or after the transformation.)
3.3.4 Job Ticket

We have now configured the workflow parameters on the Input Settings > Job Ticket page without looking at a job ticket. But now, we need to leave the workflow configuration for a moment and take a closer look at a basic XML job ticket. Just leave the workflow window open in GMG FlowConnect, we will come back to it directly after this step.

Default job settings are defined in the template derived from the uploaded ColorServer/InkOptimizer hotfolder. For achieving a maximum flexibility and automation, parameters can also be read out from the job ticket. This means you can define those parameters in the connected external workflow system.

Some parameters such as the input image/PDF file path will change from job to job. Other parameters such as the used template could be a fixed parameter of GMG FlowConnect—but on the other hand, it could also make sense to select the template in the job ticket.

Let us now have a closer look at the XML structure of a job ticket.

You will find the job ticket in the tutorial folder (default path: C:\Program Files\GMG\Connect\Documentation\Tutorials:\GMG-flowConnect_ColorServer\Sample Files\Job Ticket.xml

This is a screenshot of a basic job ticket opened in an XML editor. You can see that the job ticket is an XML document that can be described as a tree containing nodes. The nodes in an XML document are very similar to a folder structure on a computer system. Jobticket is a root node containing another root node ColorProof, containing two root nodes Job and ColorServer.
3. Setting up FlowConnect

The Job node contains multiple element nodes: ImagePath, TemplateName, Priority. The ColorServer node contains the OutputPath element node.

An element node describes a job parameter, for example, the file name of the input image (ImagePath). An element node can be referenced in GMG FlowConnect by its XPath location path. Similar to a file path on a computer system pointing to the target file in the folder structure of a computer, the XPath location path points to the target element node in the node structure of an XML document. The XPath location path is composed by the nodes in the tree; each node separated by "/". A / by itself selects the root node of the document. The next root node follows, and so forth, until the target element node is defined. For example, /Jobticket/ColorProof/Job/ImagePath is the XPath location path for the input image (ImagePath) element node in the document shown in the screenshot.

Regarding the tutorial, the following parameters are defined in the Job Ticket.xml job ticket.

<table>
<thead>
<tr>
<th>XML Element</th>
<th>Group</th>
<th>XPath Location Path in Job Ticket.xml</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ImagePath</td>
<td></td>
<td>/Jobticket/ColorProof/Job/ImagePath</td>
<td>File path of the input file (Input Settings &gt; Image &gt; Image Location)</td>
</tr>
<tr>
<td>TemplateName</td>
<td></td>
<td>/Jobticket/ColorProof/Job/TemplateName</td>
<td>Name of the template uploaded to GMG ConnectServer (Job Settings &gt; Template Name or Template ID)</td>
</tr>
<tr>
<td>Priority</td>
<td>General Properties</td>
<td>/Jobticket/ColorProof/Job/Priority</td>
<td>Priority of the job in ColorServer</td>
</tr>
<tr>
<td>OutputPath</td>
<td>ColorServer 4.6 for PDF</td>
<td>/Jobticket/ColorProof/ColorServer/OutputPath</td>
<td>File path of the output file</td>
</tr>
</tbody>
</table>

Note: The XPath nodes and location paths used in Job Ticket.xml are only examples. You could use any root and element nodes you like in the job ticket. You only need to make sure to reference the correct XPath location paths in the Workflow dialog box in GMG FlowConnect.

3.3.5 Identifying the Image Corresponding to the Job Ticket

Processing information is generally defined in the template and job ticket (except when extracted from XMP image metadata). In a Job Ticket Workflow, the job ticket usually contains the file path of the image to be processed.

Tip: Alternatively, you can also use fixed image input folders and match the input files via regular expressions (Identify by Name).

How to identify the image corresponding to the job ticket

1. Click the Input Settings button on the navigation panel on the left side of the New Job Ticket Workflow dialog box.
2. Click the Image tab and select Identify by Job Ticket.
3. Under Image Location, activate the XPath function and enter an XPath expression that points to the XML job ticket information referring to the file path of the image that is going to be processed. For the example job ticket used in the tutorial, enter the XPath location path /Jobticket/ColorProof/Job/ImagePath into the edit box.
3.3.6 Assigning a Template to the Workflow

The template defines all default settings required to create a job. These default settings can be overwritten by the job ticket (or image metadata).

Templates are generated from ColorServer/InkOptimizer hotfolders or ColorProof 05 workflows and then uploaded to GMG ConnectServer (see "Uploading ColorServer/InkOptimizer Hotfolders as Templates to ConnectServer" on page 16). In the following step, you will link a template defined in the job ticket to the GMG FlowConnect workflow.

How to assign a template to the workflow

1. Click the Job Settings button on the navigation panel on the left side of the New Job Ticket Workflow dialog box.

2. From the Template Name or Template ID drop-down list, select a template of your choice defining the default settings for new jobs.

   In the tutorial, we will extract the template name from the job ticket. Therefore, we will not use the drop-down list, but an XPath expression. Activate the XPath function under Template Name or Template ID Location and enter the location path /Jobticket/ColorProof/Job/TemplateName into the edit box.

3.3.7 Defining Job Parameters in the Job Ticket

In this step, we will define the job parameters that will be read from the job ticket, thus ignoring the default settings in the template.

Per default, all XPath expressions supported in a job ticket in GMG FlowConnect, are already preselected in the parameter list on the Job Settings page. The parameters are grouped according to the template type for which they can be used. For example, the template type ColorServer for PDF supports different parameters than a proofing template type. The General Properties group comprises more generic parameters supported by all template types.

In the example job ticket used in the tutorial, the following parameters are defined in the job ticket: Priority (General Properties) and OutputPath (ColorServer for PDF). (You could deselect all other XPath expressions in the list as they are not used, but unused parameters do not present any harm, so you can keep them for the time being. If a selected parameter is not set by an XPath expression in the job ticket, the default value from the template is used.)
How to define job parameters in the job ticket

1. Click the **Job Settings** button on the navigation panel on the left side of the **New Job Ticket Workflow** dialog box.
2. In the parameter table below the selected template, you can enter the location paths for the parameters that will be defined by the job ticket.
   For the tutorial, activate the **XPath** function in the **Priority** parameter row and enter the XPath location path `/Jobticket/ColorProof/Job/Priority`.
3. For the tutorial, activate the **XPath** function in the **OutputPath** parameter row and enter the XPath location path `/Jobticket/ColorProof/ColorServer/OutputPath`.

   ![Fig. 11 Workflow Job Settings.](image)

   The screen shot shows the final workflow job settings described in the preceding instructions.

### 3.3.8 Setting up an Error File Folder

Job tickets that could not be processed are moved to a user-defined **error files folder**.

You need to define an **alternative job ticket** for creating reports as a **fallback** in the case that the original job ticket would contain invalid parameters, and as a consequence, a valid report could not be created from this job ticket. For example, this could be the case if the input job ticket was no valid XML and could not be interpreted by the program.

You can set up multiple reports with different information content, layout, and format, all defined by XSLTs. However, reports are not required for the basic operation and are therefore not subject of this tutorial.

**How to set up an error file folder**

1. Click the **Import Folder Path** button on the right side of the **Error Folder for Hotfolder Files** path.
2. Browse to the desired folder, or create a new folder, and confirm by clicking **OK**.

   ![Error Folder for Hotfolder Files](image)

3. Click the **Import Folder Path** button on the right side of the **Alternative Job Ticket for Error Reports** path.
4. Select a default job ticket (default file path for factory default: `C:\Program Files\GMG\Connect\FlowConnect\defaultjobticket.xml`).

   ![Alternative Job Ticket for Error Reports](image)
3.3.9 Creating a Log File Report

GMG FlowConnect workflows can automatically generate job reports in an XML format. For each workflow, you can customize the type of report (E-Mail, Log File, Command Line) and the content and layout for each report. You can also assign multiple reports triggered by different events to each workflow. For example, you could document all jobs by generating a log file. You could send an e-mail to your system administrator if there are warnings or unprocessed error jobs.

You can use an XSLT file to transform the XML report into another file format, for example, html, using a custom layout. Under Log File XSLT, you can select an XSLT file. Reports will then be transformed by the selected XSLT file. Make sure that the file name extension specified under Log File Location matches the output generated by the XSLT. Otherwise, it might be difficult to open the file on a Windows operating system.

How to configure a log file report

1. On the navigation panel on the left of the workflow dialog box, click Report Settings.
2. On the toolbar, click the New Report button to expand the report commands.

The Report dialog box is displayed.

4. Enter any text string for the Log File Report Name.

5. Under Log File Location, remove the check mark to deactivate the XPath option.
3. Setting up FlowConnect

6. Enter the target file name and path for the report file into the edit box. You can use system variables such as $JobName to reference the Job Name in the report file name. You can select variables from the drop-down list on the right side of the edit box.

7. Select a Log File XSLT. You will find a factory default XSLT here (default path): C:\Program Files\GMG\Connect\FlowConnect\report.xslt

8. From the Variable Replacement list, select the option Replace variables before XSL transformation. Selecting this option is important if you are using system variables such as date and time in the report. For example, if the date variable is not replaced with the date value before the XSL transformation, the report XSLT will have no access to the value. This is especially important if you use the date variable in the file name, because otherwise, the XSLT will try to create a file name with

9. Select the events you want to use for triggering the report generation.
Fig. 12 Report Settings.

The screen shot shows the final workflow report settings described in the preceding instructions. Report files will be generated if the job has been successfully processed with and without generating a warning, and also if the job could not be processed (error status). Reports will be saved to the (fixed) folder c:\Data\FC_Output_PDF (which is the same folder as the output folder we used in the tutorial). The file name will be concatenated by the Job Name and the Job Status in GMG FlowConnect.

The final report name for the job ticket we used in the tutorial will be as follows: Log Job Ticket.xml_Successful.html

By applying the XSLT used in the tutorial, the output report file will be an HTML file with a table layout, as shown in the following screen shot.

This screenshot shows the generated HTML report opened in a standard web browser. You see that by using the XSLT, only basic information on Input Files, Output Files, and Error and Warning messages is shown. By customizing the XSLT, you could show further information.

The content is formatted in HTML table layout, as defined in the XSLT file. The background color of the table cell depends on the job status: Successful processing without warning will be highlighted by a green background color, Warnings will be highlighted by a yellow background, and errors by a red background.
3.3.10 Cleanup/Backup Routines

On the Cleanup/Backup tabbed pages, you can define how input job tickets and image files should be handled. For this tutorial, it is ok to leave the default settings unchanged (Keep = Input files are not deleted or moved).

3.4 Creating and Processing a FlowConnect Job

3.4.1 Creating a Job from a FlowConnect Workflow

We have now finished the configuration of the workflow. Now, let us test the workflow and create a job from the sample job ticket provided in this tutorial. You will find the input PDF and job ticket in the tutorial folder (default path: C:\Program Files\GMG\Connect\Documentation\Tutorials.

How to create a job for a workflow

1. Make sure GMG ColorServer is running on the connected computer and the GMG CP04 Connector service is also running.
2. As a prerequisite for the tutorial, copy the input PDF into the folder defined in the job ticket: c:\Data\FC_Input_PDF\PDF-AdobeRGB.pdf.
3. Copy the provided Job Ticket.xml into the hotfolder defined in the Workflow: C:\Data\FC_Jobticket_PDF.

Because we have configured a job ticket workflow, the job is now automatically created from the job ticket and will appear in the Jobs list in GMG FlowConnect.

The job will then be uploaded to GMG ConnectServer, sent to GMG CP04 Connector, and finally processed by ColorServer/InkOptimizer (controlled by GMG CP04 Connector).

The finished output file is finally saved to the target location on the GMG FlowConnect computer. The output file name and path is defined in the job ticket: c:\Data\FC_Output_PDF.

See also:
- "Folder Structure Required for the FlowConnect Sample Workflow" on page 22
- "GMG Connect for ColorServer/InkOptimizer" on page 5
- "Monitoring the Job Status in GMG FlowConnect" on page 31
- "Monitoring the Job Status in GMG ConnectManager" on page 32
- "Job Processing in ColorServer/InkOptimizer" on page 32

3.4.2 Monitoring the Job Status in GMG FlowConnect

Jobs created by GMG FlowConnect will appear in the Jobs list in GMG FlowConnect.

The print status of the job is shown in the list (1). The name of the connector (2) processing the job is also shown: GMG CP04 Connector on the computer “GMG-CL” is processing the job, that is, handing it over to ColorServer/InkOptimizer on the same computer.

Finished jobs are sent to the History list.

See also:
- "GMG Connect for ColorServer/InkOptimizer" on page 5
3.4.3 Monitoring the Job Status in GMG ConnectManager

Fig. 13 Checking the job status in GMG ConnectManager.

You can monitor the status of all jobs in GMG ConnectManager, from any computer in the network.

For example, the **Processing** status means the job has been downloaded successfully to the connected computer and is now being processed by ColorServer/InkOptimizer.

You can click the **Log** button to show a detailed job log.

See also:

- "GMG Connect for ColorServer/InkOptimizer" on page 5

3.4.4 Job Processing in ColorServer/InkOptimizer

From GMG ConnectServer, the job will be downloaded by GMG CP04 Connector, and finally processed by ColorServer/InkOptimizer (controlled by GMG CP04 Connector).

**Note:** Parameters for processing the job are defined in the GMG FlowConnect **workflow**, connect **template** on the GMG ConnectServer, and **job ticket**. ColorServer/InkOptimizer settings on the local computer are **completely ignored**.

The output file is then uploaded to GMG ConnectServer, downloaded by GMG FlowConnect, and finally sent to the output folder specified in the workflow and job ticket.

See also:

- "GMG Connect for ColorServer/InkOptimizer" on page 5
4. Server Connection and GMG ConnectManager

Connectors in a Connect system do not talk directly to each other, but communicate via GMG ConnectServer. As default, all connectors connect to localhost. You will need to specify the IP address of the computer on which GMG ConnectServer is installed in the System settings of all Connectors such as GMG FlowConnect and CP04 Connector / ColorProof 05.

GMG ConnectServer has no application or graphical user interface; it runs as a Windows service in the background.

You can use the server administration tool GMG ConnectManager from any computer in the network to manage application data files or monitor the system on the server.

Fig. 14 Connectors connected to GMG ConnectServer.

GMG ConnectManager shows the settings application data files available on GMG ConnectServer. On the Connectors page, you will see all Connectors that are currently connected to the server.

In the screenshot, you can see that GMG FlowConnect and GMG CP04 Connector, installed on two separate computers, are connected to GMG ConnectServer. GMG ConnectManager shows the computer name in the network (1), the Connector type (2) and further information available on the Connector (3) such as printers and application data files available on the local system.