User Guide

FlipFactory

Version 6.1

FlipFactory New Media

FlipFactory New Media Broadcast

FlipFactory Pro SD

FlipFactory Pro HD

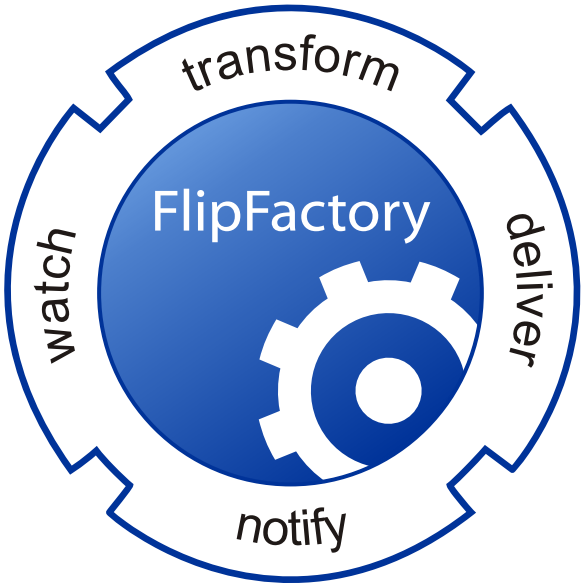
TrafficManager

AdManager for Cable

NewsManager

FactoryArray

GraphicsFactory



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FlipFactory has been designed for professionals skilled in the art of digital media transformation and workflow automation, to facilitate the automation of complex media operations and workflow that require a multitude of input and output media formats, delivery to numerous types of media devices and file systems, and notification of media systems including broadcast automation systems and media asset management systems.

The FlipFactory architecture and user interface is designed to provide maximum flexibility in the setup and configuration of these complex media transformations and workflow. In providing this high degree of flexibility, it is possible for media transformation and workflow processes to be configured that are impractical, likely to result in unexpected or unintended results, or beyond the limits of FlipFactory to perform satisfactorily. Additionally, FlipFactory may be executed on a platform that lacks the performance or capacity to perform the media transformations and workflow you've configured, which is your responsibility to specify. Telestream has chosen to implement FlipFactory to provide the greatest flexibility without limiting its functionality to only those transformations and workflow that are known with certainty to be within its performance capabilities, including those limits imposed by the platform upon which you have installed FlipFactory.

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Part Number: 74-0020-13

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Preface

SUPPORT AND INFORMATION

To obtain support services for Telestream's workgroup and enterprise products, or for information about Telestream or its products, contact us via these methods:

Internet

Web Site. www.telestream.net

Support Services. support@telestream.net

Licensing. license@telestream.net

Sales and Marketing. info@telestream.net

USA Telephone

Main. (530) 470-1300

Support Services. (877) 257-6245 from 6 am to 6 pm weekdays, excluding U. S. holidays. Terms and times of support services vary, based on the terms of your current service contract with Telestream.

Mail

Telestream, Inc.
848 Gold Flat Road, Suite 1
Nevada City, CA. USA 95959

International

See our Web site for your regional authorized Telestream distributor.

HOW TO USE THIS GUIDE

This guide helps you install FlipFactory, get up and running quickly, and learn how to implement and use FlipFactory. You may view or print this guide with Adobe Acrobat Reader. The guide is also available by clicking the Help button located on the FlipFactory Console.

In addition to a table of figures and tables, glossary and index, it contains the following sections:

Chapter 1, Introduction to FlipFactory

This chapter describes the family of FlipFactory products. It also describes how to get started with FlipFactory.

Chapter 2, Installing FlipFactory

This chapter provides platform requirements for FlipFactory servers and describes how to perform a clean install, upgrade from version 3.0 or greater, downgrade to older versions, and how to obtain and install a FlipFactory license.

Chapter 3, Guided Tours

This chapter offers guided tours of FlipFactory. In the first tour, you learn about the architecture of FlipFactory-how it is organized and how it processes jobs.

In the second tour, you launch FlipFactory Console and learn how to access a factory. You'll also walk through a factory – discovering its components and how it transcodes jobs.

In the final tour, you build your own factory to produce Windows media files. You can take all three tours in less than 45 minutes.

Chapter 7, Customizing FlipFactory

This chapter includes topics for customizing FlipFactory to operate properly in your environment. These tasks involve configuring the server operating system, setting up FlipFactory to access network servers, and changing registry settings as needed.

Chapter 4, Chapter 4, Using FlipFactory

This chapter is an overview of the main features of FlipFactory. FlipFactory organizes its features by administrator and user. Administrators configure FlipFactory, set up user accounts, and monitor system status. Production work (creating factories and submitting and monitoring jobs) is performed by users.

Chapter 5, Building Factories

This chapter teaches you all about the details of building and maintaining factories that process transcoding jobs. It includes building monitors, specifying codecs and their respective output files, and other analysis processes, and setting up delivery and notification methods.

Chapter 6, Submitting & Working with Jobs

Use this chapter to learn how to submit a job manually, by entering the job requirements in the Submit Job window. Manual submission of a job is an alternative to allowing a factory to start a job by monitoring folders for new input media files.

This chapter also shows you how to use the Monitor Jobs window to view jobs in progress, and jobs that have already completed.

Chapter 8, Processing Jobs with Metadata

This chapter discusses how FlipFactory process jobs that include associated metadata files, for RSS feed and podcast-destined media.

Chapter 9, Load Balance Groups

This chapter describes common FlipFactory database implementations, and how to implement them.

Chapter 10, Database Implementations & Operations

This chapter describes common FlipFactory database implementations, and how to implement them.

Appendix A, Troubleshooting

Use this appendix to identify likely causes for problems you may encounter when using FlipFactory.

Appendix B, Uninstalling FlipFactory

This appendix contains instructions for uninstalling FlipFactory.

NOTATIONAL CONVENTIONS

The guide uses certain conventions used to make the guide more readable.

Notes, Tips & Cautions

Note paragraphs are set in italic type to draw your attention to special circumstances or configurations for proper operation of FlipFactory:

Note

Notes highlight important information about the topic you're studying. Be sure to read this information before continuing.

Tip paragraphs are also set in italic; they provide helpful information you may not be aware of, or that may make using FlipFactory easier:

Tip

Tips are bits of information you might not be aware of, or that make using FlipFactory easier.

Caution paragraphs are set in bold type to draw your attention to situations that may modify your operating system or cause data loss.

Caution

Cautions identify actions that may cause data loss or other permanent changes to FlipFactory or your media assets.

TYPOGRAPHICAL CONVENTIONS

Certain typographical conventions are used as visual clues in this guide. Sample information, or a specific format to be used when entering information, is shown in italics, or in a courier-style font. For example:

Type your domain (*mydomain.com*) in the domain field.
Type `import FileName` where *FileName* is the fully-qualified path.

WE'D LIKE TO HEAR FROM YOU!

If you have comments or suggestions about improving this document, other Telestream documents, or our Web site – or if you've discovered an error or omission, please email us at support@telestream.net.

CHAPTER 1

Introduction to FlipFactory

WELCOME TO FLIPFACTORY!

FlipFactory™ is the dependable, powerful, scalable way to automatically transcode and publish your digital media. FlipFactory provides a versatile suite of workflow automation tools, allowing broadcast, VOD & cable companies, post houses, enterprises and other media publishers to build workflows to meet their exact media encoding requirements.

FlipFactory enables you to create custom work flows that automatically transcode (*flip*) your source media into a wide variety of streaming and broadcast formats, and delivers the encoded media to destinations you specify, including media servers, Telestream ClipMail™ appliances, network folders or SAN pools, automation systems, and FTP sites.

Whether you're automating the production of multiple streaming formats, re-purposing existing programing, or automating reception, processing and distribution of digital media at your TV station, there is a FlipFactory edition for you. FlipFactory also provides tools for production of mobile media, HD media, news, broadcast, and graphics files.

FlipFactory also allows you to set up workflows to ingest XML-based metadata to transform and deliver metadata along with your media – a powerful way of re-purposing media for VOD and online markets.

FlipFactory operates as a multi-user process on major Windows platforms, and allows operators to access, manage and operate FlipFactory from consoles on Windows and MacOS computers.

With FactoryArray, FlipFactory can be scaled to support multiple servers with a centralized database to implement database redundancy and load balancing, which improves system uptime, and speeds job execution.

FLIPFACTORY IS A FAMILY OF PRODUCTS

Each edition of FlipFactory is designed for a specific digital media workflow and application, and is enabled by the license you purchase:

FlipFactory New Media Our entry-level FlipFactory product. FlipFactory New Media supports transcoding from virtually any source format to a broad range of mobile and Web formats, including WMV/VC-1, H.264, Apple iPod, 3GP, MPEG-4, Flash 8 (optional) or 9 (included), and others.

FlipFactory New Media Broadcast The New Media Broadcast edition adds support for decoding professional broadcast formats.

FlipFactory Pro SD FlipFactory Pro SD adds support for encoding broadcast SD formats.

FlipFactory Pro HD Also supports encoding HD formats, up-conversion from SD to HD, and MXF workflows.

FactoryArray FactoryArray extends the power of any FlipFactory, TrafficManager, NewsManager or GraphicsFactory system from a single server to an array of servers working together to process jobs in the most efficient and secure manner possible.

Intelligent load balancing distributes jobs across servers. Auto-failover protection ensures that if any one server should fail, the remaining servers will continue to process jobs without interruption. Database mirroring replicates factory settings and job workflow information in real-time on a separate server, and provides automatic recovery mechanisms for all workflows.

TrafficManager automates the workflow of commercial spots in television broadcast stations. This powerful workflow automation tool streamlines the way you receive, track and redistribute commercials, promos, news and other incoming content. For information about setting up and using TrafficManager, see the TrafficManager User's Guide.

NewsManager automates news workflow for television broadcast stations – ingesting news content from multiple sources, including Bit Central, Reuters, Pathfire DMG, FTP servers, and ClipMail appliances, with direct digital delivery to destination newsroom and legacy systems.

AdManager FlipFactory AdManager for Cable streamlines the way cable companies move and manage commercials and other media being received from digital delivery services such as Vyvx, Mijo and DG FastChannel, internal edit suites, and other corporate and regional sources. Digital workflow automation eliminates the need for manual

intervention, saving time, labor, and reducing the risk of errors for cable companies.

GraphicsFactory is a template driven, file-based graphics workflow automation program. Using a temporal metaphor, you can visually construct a layered template for media by assembling text, drop shadows, images, backgrounds, and QuickTime layers, then submit the job to FlipFactory for processing the media into a format you specify.

GraphicsFactory is ideal for assembly and delivery of logos, promos, cross-sell clips, or metadata driven graphics clip generation. For information about setting up and using GraphicsFactory, see the GraphicsFactory Quick Start Guide.

FLIPFACTORY WEB RESOURCES

Telestream's Web site is the best place for customers to learn about the entire FlipFactory family of products and their applications. Registered users can download or view related documents, including User Guides, App Notes, Data Sheets, and Market Briefs.

You can also download other versions of FlipFactory, GraphicsFactory, FactoryArray, and other software, plus updates as they become available.

To find any of these resources, go to http://www.telestream.net/products/flipfactory.htm and browse around.

UP AND RUNNING

If you are upgrading your current FlipFactory server, performing custom or complex installations, or just want detailed, step-by-step installation instructions, proceed directly to "Installing FlipFactory" on page 2–1 to install FlipFactory in your environment.

To install FlipFactory and get up and running quickly, follow these steps:

Step 1 Review "Installing FlipFactory" on page 2–1 to ensure your server platform meets the requirements and you are familiar with installation procedures for your environment.

Step 2 Use Installing FlipFactory on a Clean Server (page 2-4) to install FlipFactory on a new server, and to obtain and install the license from Telestream.

Step 3 Take the tours in Chapter 3 "Guided Tours" on page 3–1. In about 45 minutes, you'll learn how to use the FlipFactory console, flip (transcode) your first media, learn about factories and how to build them, and how to submit jobs to produce media files, and monitor their progress.

CHAPTER 2

Installing FlipFactory

Use this chapter to qualify your platform for FlipFactory version 6.1, download the FlipFactory installer and install or upgrade FlipFactory, install the FlipFactory Console, obtain a license, and validate installation.

Note

Telestream does not support FlipFactory V3.1.16333 or earlier.

Topics

Note

FlipFactory users can download or view User Guides, App Notes, Data Sheets, and Market Briefs in PDF format. You can also download versions of FlipFactory, GraphicsFactory, FactoryArray, other software and updates. To find these resources, go to http://www.telestream.net/products/flipfactory.htm and browse around.

FLIPFACTORY INSTALLATION OVERVIEW

Note

Read this section before starting any installation tasks, so that you understand what actions the FlipFactory installer performs. Then, proceed to "Installation Tracks", immediately following.

If you plan to connect this FlipFactory to a load balance group or FactoryArray, you should externalize all stores definitions and replicate custom registry settings to all FlipFactory servers (Implementing a Load Balance Group (page 9-2)).

When you install FlipFactory, the installer performs the following:

- Installs the Intel Performance Primitives system software for Intel processors
- Installs Bonjour, Apple's software that enables automatic discovery of devices and services on a LAN, via standard IP protocols. Bonjour runs as a service in Windows, and by default, the service is off.
- Installs/updates Java Runtime Environment 5 (Java 1.5)
- Checks for QuickTime 7.2 or later and requires installation if missing or obsolete
- Creates a Telestream directory for FlipFactory and related files
- Installs FlipFactory and related files (DLLs, PDFs, license tool, user guide, etc.)
- Installs or updates Windows Media, and PacketVideo
- Installs (updates MSDE if present) SQL Server 2005 Express Edition

  If you plan to connect this FlipFactory to a load balance group or FactoryArray, you'll need to update the Database Server field to the correct host name/IP address in System Settings before connecting (Configuring System Settings (page 6-20)).
- Creates a Telestream > FlipFactory entry in the Programs list and provides entries for the FlipFactory Console, License Tool, Uninstall FlipFactory, and User Guide (this manual)
- Creates a desktop shortcut (*Install FlipFactory Console)* to install the console the first time it is run.

INSTALLATION TRACKS

To install FlipFactory, choose from these tracks:

- Clean Install – Installing FlipFactory on a Clean Server (following) when performing a clean installation on a computer that has never FlipFactory installed, or has just had a clean installation of Windows, including reformatting the hard drive, deleting all applications, registry, and user data.
- Downgrading – Downgrading To Earlier Versions (page –4) when downgrading from FlipFactory 5.1 or later to an older version back to Version 3.0 (Telestream does not provide support for FlipFactory Version 3.1.16333 or earlier)
- Upgrading – Upgrading from Earlier Versions (page –5) Upgrading from FlipFactory Version 3.0 or greater.

Proceed to the section for your situation and perform the specified tasks.

Note

If you are installing or upgrading GraphicsFactory, you must install the same version of FlipFactory and GraphicsFactory.

If you are installing or upgrading a load balance group, or FactoryArray, you must install the same version of FlipFactory on all servers using the central database.

If you do not use the same license on all Flip Engines in the group/array, you must configure monitors to only submit jobs to FlipEngines that are licensed to meet the requirements of the specific factory, or the job will fail.

To implement a FactoryArray or load balance group, refer to the FactoryArray User's Guide.

INSTALLING FLIPFACTORY ON A CLEAN SERVER

Use this section to perform a clean installation of FlipFactory. You should only perform a clean install when you are installing on a new computer with a fresh copy of Windows and no previous copies of FlipFactory.

Or, you don't want to keep your FlipFactory accounts and factories, job history (all in the database), or your FlipFactory registry settings. You've reformatted the hard drive and performed a clean Windows installation.

Note

If you want to obtain a clean Windows registry, you need to re-install Windows and perform a clean Windows install after formatting the drive. Otherwise, your registry is untouched.

Step 1 Review FlipFactory platform requirements (page –7). Before performing any installations, review the server platform requirements.

Step 2 Prepare your FlipFactory server (page –10). Perform any necessary upgrades to prepare it for installing FlipFactory.

Step 3 Verify that you have QuickTime 7.2 or later installed in the default QuickTime directory before running the FlipFactory installer.

Step 4 Download FlipFactory installation software (page –11). Download the FlipFactory software from the Telestream Web site.

Step 5 Install FlipFactory (page –11).

Step 6 Obtain and install a FlipFactory license (page –14). Log on to the Telestream Web site to obtain a FlipFactory license.

Step 7 Install the FlipFactory console (page –18).

Step 8 Validate the FlipFactory installation (page –20). After validation, perform a series of tests in FlipFactory before going into production.

DOWNGRADING TO EARLIER VERSIONS

You can install an older version of FlipFactory (back to Version 3.0) on a server that has FlipFactory Version 5.1 or greater installed.

Step 9 Use Add/Remove programs to uninstall FlipFactory (Uninstalling FlipFactory, page –1). Do *not* install a new version of FlipFactory without uninstalling the old version first.

Step 10 Proceed to Upgrading from Earlier Versions (immediately following) and perform each step as indicated.

UPGRADING FROM EARLIER VERSIONS

The purpose of performing an upgrade instead of a clean install is to preserve your FlipFactory registry settings and your FlipFactory database – your accounts, factories, and job history.

Caution

FlipFactory customers who have a current annual maintenance and support agreement can confirm the status of their annual maintenance and support agreement, by emailing license@telestream.net.

If your maintenance has expired and you upgrade your FlipFactory server, it will not function after you upgrade.

Perform these tasks to install FlipFactory on a server that has FlipFactory Version 3.0 or greater installed:

Caution

Telestream recommends that you run a separate instance of the new FlipFactory version in parallel with your production workflow before updating your production FlipFactory servers. Telestream provides a limited license so that you can configure and qualify the new version prior to upgrading your production servers.

For details of how to replicate your FlipFactory database to a test server, See Database Implementations & Operations (page 10-1).

Before performing an upgrade, be sure to read the installation notes that accompany the installer for last minute details on a successful FlipFactory upgrade.

Step 1 Review FlipFactory platform requirements (following). Before installing the new version, review the server platform requirements to make sure the computer meets new requirements.

Step 2 Run FlipFactory and click About. If you purchased FlipFactory more than a year ago or you are not current on your maintenance agreement, a new license file is required. To obtain a new license, send an email to license@telestream.net with your current license attached. The license.dat file is located in the FlipFactory license folder (default *C:\Program Files\Telestream\FlipFactory\License*).

Step 3 Make sure that JRE 5.0 (Java 1.5) is installed before installing QuickTime, so that the QuickTime plug-in works correctly. The JRE installer is available at www.java.com.

Step 4 Prepare your FlipFactory server (page –10). Perform any necessary upgrades to prepare it for upgrading FlipFactory to the new version.

Step 5 Verify that you have QuickTime 7.2 or later installed in the default QuickTime directory before running the FlipFactory installer.

If you have just installed Java 1.5 in step 2, you *must re-install QuickTime* for it to work correctly in your FlipFactory console.

Step 6 Back up your FlipFactory database. If you do not have Microsoft back up software, you can download and install SQL 2005 Management Studio. Follow the procedures at http://msdn.microsoft.com/en-us/library/ms187510.aspx.

Step 7 If you use stylesheets for metadata processing or other workflows, and have modified the default XML templates, to preserve your settings, make a copy of each modified stylesheet and change its name to something unique to your environment. Then, restart the FlipFactory service and select the newly named stylesheet in the factory where it is used. FlipFactory will not overwrite uniquely-named stylesheets during an installation.

Step 8 Download FlipFactory installation software (page –11). You can download the FlipFactory software from the Telestream Web site.

Step 9 Use Add/Remove programs to uninstall FlipFactory (Uninstalling FlipFactory, page –1). Do *not* install a new version of FlipFactory without uninstalling the old version first.

Step 10 Install the current version of FlipFactory (page –11).

Step 11 Obtain and install a current FlipFactory license (page –14). Log on to the Telestream Web site to obtain a FlipFactory license.

Step 12 Review the release notes that accompany this release. Make note of any components that are in use in any factories: monitors, process/analyze tools, encoders, filters, notifications, and destinations.

Step 13 Upgrade the existing factories in your accounts (page –17). This process analyzes each component of pre-existing factories and updates them to drop old settings and add new ones.

Step 14 Install the FlipFactory console (page –18).

Step 15 Validate the FlipFactory installation (page –20). After installation is complete, perform a specified series of tests in FlipFactory to validate successful installation.

FLIPFACTORY PLATFORM REQUIREMENTS

Before installing FlipFactory, review your server operating system and hardware to ensure that they meet the minimum requirements.

Caution

For best performance, operate FlipFactory on a dedicated server. Telestream recommends that you install FlipFactory on a clean server with a recently-formatted hard drive.

For best performance, and to avoid installing conflicting versions of software that may render FlipFactory or other media-management software inoperable, do not use this server for any other server function.

Server OS Requirements

FlipFactory systems require one of the following operating systems:

Note

To effectively operate FlipFactory with other networked devices or systems, you must disable the Windows Firewall.

If you utilize anti-virus software, you should identify FlipFactory as a safe or trusted application. Also, be sure to turn off anti-virus software during FlipFactory installation, or install the anti-virus software after you install FlipFactory.

- Windows XP Professional with Service Pack 1 or later
- Windows Server 2003
- Windows Server 2008

Windows Server 2003 Requirements

AVI Cinepak codec by Radius Windows Server 2003 does not include the AVI Cinepak codec by Radius. If you plan to use this codec, see "Installing Radius AVI Cinepak Codec" on page 7–30.

Windows .NET 2.0 Framework x 64 If you are running Windows Server 2003 on a 64-bit computer, you must have Windows .NET 2.0 Framework x 64 installed, or MS SQL Server Express 2005 will not install. Obtain the .NET 2.0 Framework x 64 installer from the Microsoft Web site and install it before continuing.

Windows Server 2003 by default prevents programs from being started by other programs, a feature FlipFactory uses. Go to My Computer > Properties > Advanced and click Performance Settings. Click the Data

Execution Prevention tab and check Turn on DEP for essential Windows applications and services only.

Windows Server 2008 Requirements

Prior to installing FlipFactory, the Desktop Experience must be installed under Server Manager > Features. From the same menu, Telnet Client and Telnet Server may also be installed as optional features.

Telestream recommends that FlipFactory be installed by right-clicking the installation file and selecting Run as Administrator. Although set by default on the standard distribution of Server 2008, ensure that the Computer Browser service is enabled.

Port Requirements

FlipFactory uses the following ports (default):

Table 2–1. IP Ports for FlipFactory

Port	Usage
1099	JNI / Java RMI
9000	HTTP
9001	JNLP
23	Telnet
25	SMTP
1433	SQL Server 2005

QuickTime Requirement

FlipFactory requires QuickTime 7.2 or later. If QuickTime 7.2 or later is not installed, download it from http://www.apple.com/quicktime/win.html. click Free Download to download and install it

Notes

When the installer runs, it checks for QuickTime 7.2. If QuickTime is not installed in the default directory, the installer will advise you to install QuickTime and terminate.

Java Runtime Requirements

The FlipFactory Engine requires Java Runtime Environment 5.0 (Java 1.5). The FlipFactory Console uses Java 1.5 or later.

Server Hardware Requirements

The server hardware requirements depend on the amount of media you plan to process and the turn around time you require during transcoding. FlipFactory is optimized for dual quad-core Intel and Intel-compatible processors that support Windows operating systems.

Processor: Dual quad-core processors, 4MB cache recommended. 64-bit processor computers may be used for running Windows Server 2003 and Windows Server 2008.

RAM: 4 Gigabytes RAM recommended, depending on number of concurrent translation sessions desired.

Ethernet: 100 Mbps Ethernet. (Dual Ethernet may be needed in some situations). Gigabit Ethernet is recommended for multiple server configurations, and may improve performance on single server systems.

Numeric Processing Instruction Set: MMX, SSE, and SSE2 enabled.

Disk Space Requirements

The recommended disk space is about 500GB. The space includes 146GB for FlipFactory, 300GB disk space for localized media, plus disk space for your FlipFactory SQL Server 2005 Express database, which has a 4GB size limit. If you are implementing another database engine, consult Chapter 10, Database Implementations & Operations (page 10-1).

Disk requirements depend on inbound and outbound media (if any) to be stored on the server. Inbound media is typically discarded immediately after a job completes.

Each server may be configured to operate independently with its own storage system (either local or a partition of a SAN pool), or several servers may be configured in a group with one server *owning* the file system and managing the files database. Other servers in the group must have shared access to the storage.

FlipFactory Console Requirements

On Windows platforms, Windows Internet Explorer or FireFox is required to run the Java console, and Java 1.2.2 or later is required; Java 1.5 or later is preferred. The FlipFactory console can also be used on Mac OS X in the Safari Web Browser, with the same Java requirements.

PREPARING YOUR FLIPFACTORY SERVER

To prepare your server for operating FlipFactory, follow these steps:

Step 1 Perform any upgrades necessary to make your platform meet the minimum requirements for operating FlipFactory (page –7).

These tasks are optional, but highly recommended:

Step 2 Ensure that no other network services (mail, Web or FTP servers, or other media processing servers) are operating on this server.

Note

If you utilize anti-virus software, you should identify FlipFactory as a safe or trusted application. Also, be sure to turn off anti-virus software during FlipFactory installation, or install the anti-virus software after you install FlipFactory.

Step 3 Initialize or de-fragment your hard drive.

Step 4 Install and/or upgrade the operating system to meet requirements.

Step 5 Verify that you have QuickTime 7.2 or later installed, and Java 15 is installed before running the FlipFactory installer.

DOWNLOADING THE FLIPFACTORY INSTALLER

To obtain the FlipFactory installation package from the Telestream Web site, follow these steps:

Step 1 Use your Web browser to go to http://www.telestream.net/flipfactory.

Step 2 If you are not registered, click to display the Register page. Fill out the form and click Download FlipFactory. You can use your user name and password immediately. Telestream will send you a confirmation email.

Step 3 Enter your authorized user name & password, then click Log In.

Step 4 On the Download page, click the FlipFactory version to download.

Step 5 On the File Download window, click Save.

Step 6 Select a folder (or desktop) destination and click Save. The installer name format is setup.*version.build*.exe – for example: setup.6.1.36935.exe – *6.1* is the version, and *36935* is the build number (your number may differ).

Step 7 The Download Progress window displays as the FlipFactory installer is saved on your computer.

Step 8 When the download is complete, close the Web browser.

INSTALLING FLIPFACTORY

To perform a FlipFactory installation, follow these steps:

Note

Make sure you uninstall any previous versions before upgrading – don't install FlipFactory over a previous version.

Uninstalling FlipFactory does not remove the FlipEngine database where user data is stored, or remove any other user data.

Step 1 Log on with the specific account set up for FlipFactory ("Accessing Network Resources" on page 7–9), and make sure that virus-checking software and Windows Firewall is all turned off.

Step 2 Locate the FlipFactory installer on a network server if performing a network installation, download/copy the FlipFactory installer (*setup.6.1.36935.exe*, for example) to your server, or obtain the FlipFactory CD.

Step 3 Run the FlipFactory installer. If IPP, Bonjour, Java, QuickTime, or other subsystems are missing or out of date, the installer displays the components it will install (or that you must install independently).

Step 4 Click OK. The installer extracts the installers, then continues.

Step 5 **Installing Prerequisites**. Click Next to continue.

Caution

Telestream recommends that you install/upgrade all subsystems or FlipFactory may not operate correctly.

Installing Java

If Java 2 Standard Edition Runtime Environment 5.0 (also known as Java 1.5) is not present, it will be installed for use by the FlipEngine service. JRE 1.4.2 (or other versions) may also be present, and is ignored and unused by FlipFactory service. The installer displays the Java Runtime Environment installer, then automatically displays the license agreement.

Step 6 **License Agreement**. Read the license agreement. Click Next if you agree to the terms.

Step 7 **Setup Type**. Click Next to perform a typical J2SE installation (recommended). The Setup Status window provides status messages and a progress bar to inform you of progress.

Step 8 When installation is complete, click Finish. If the restart dialog displays, click No, and continue these installation steps.

Installing Bonjour

If Bonjour is not present or current, it will be installed for use by FlipFactory. The installer displays Bonjour installer. Click Continue to display the license agreement.

Note

Bonjour runs as a service in Windows, and when installed by the FlipFactory installer, the service's Startup Type is set to Manual. To use Bonjour with Pipeline or to easily connect the FlipFactory console to a FlipEngine on the network, you must start Bonjour: Click Start > Control Panel > Administrative Tools > Services > Bonjour > right-click to display Properties – change Startup Type to Automatic and click Start.

Step 9 **License Agreement**. Read the license agreement, and click Next if you agree to the terms and want to continue installation.

Step 10 When installer completes, the FlipFactory installer continue.

Installing SQL Server 2005 Express

If SQL Server 2005 Express is not present, it will be installed automatically. If MSDE is present in the default location, it is upgraded.

Windows .NET 2.0 Framework x 64 If you are running Windows Server 2003 on a 64-bit computer, you must have Windows .NET 2.0 Framework x 64 installed, or MS SQL Server Express 2005 will not install. Obtain the .NET 2.0 Framework x 64 installer from the Microsoft Web site and install it before continuing.

Installing IPP

If IPP is not present, it will be installed automatically.

Installing PacketVideo

If the PacketVideo SDK is not installed, the installer window displays.

Step 11 Click Finish to continue.

Step 12 **Installation Wizard Completed**. Click Finish to exit the wizard.

Installing QuickTime

If QuickTime 7.2 or later is not installed, the installer displays a message indicating that you should go to the Apple Web site to download and install it (“QuickTime Requirement” on page 2–8).

Step 13 When the QuickTime installer completes, exit the installer and re-run the FlipFactory installer to continue.

Installing FlipFactory

When the FlipFactory installer completes subsystem installation, it displays the Welcome window:

Step 14 **Welcome Window**. Click Next to display the license agreement.

Step 15 **License Agreement**. Read the FlipFactory Software License Terms and Condition, then click I Accept... if you agree to the license terms. Click Next to continue.

Step 16 **Customer Information**. Enter your name and organization; click Next.

Step 17 **Destination Folder**. Accept the default folder or click Change to select an alternate folder. Click Next.

Step 18 **Ready to Install the Program**. Click Install to begin component installation and updates as necessary.

Step 19 **Installation Wizard Completed**. When installation is done, the Installation Wizard Completed window displays. Click Finish.

Step 20 You must restart your server before you can use FlipFactory.

Note

Be sure to restart your server before proceeding with any other FlipFactory configuration.

OBTAINING AND INSTALLING THE FLIPFACTORY LICENSE

Before you can begin using FlipFactory in production, or take the tours, you must obtain and install a license from Telestream.

Note

You can download and install FlipFactory without a license. However, you can't perform production transcoding without obtaining a license from Telestream. Certain functionality is limited without a specific license key – for example, direct conversion transcoding. To use these capabilities for evaluation, please send the licensing group an email request (see "Support and Information" in About This Guide).

Obtain the License

You must provide Telestream the MAC address of the FlipFactory server, when requesting a license.

To display server's Mac address of the Ethernet LAN card/connector:

1. Click start > Run.
2. Enter *cmd* and press Return.
3. Enter *ipconfig /all* to display details and find the Physical Address of the Ethernet adapter Local Area connection. (e.g. 00-11-12-13-14-1D).

The license key enables all the features you purchased, and does not expire. Your license key is keyed to your FlipFactory server's Ethernet MAC address or hard disk serial number you provided to Telestream.

Evaluation/Demo License

If you're evaluating FlipFactory, the demo license key enables all of FlipFactory's features, and expires on the date shown in the feature section at the bottom of the email (usually 15 days from its start date).

If you registered with Telestream to download FlipFactory, Telestream verifies your customer information and emails you a no-cost demo license file, usually within one business day of registering.

Upgrade License

If you are a current Telestream customer, send an email to license@telestream.net and attach your old license to obtain an upgrade license file for the current version of the software.

Load Balance Group and FactoryArray Licenses

If you are establishing a load balance group, you must obtain a separate license for each FlipFactory server.

Note

Telestream recommends that all FlipFactories in a load balance group/FactoryArray have the same license, so all jobs can be processed by any FlipFactory. If a job is sent to a FlipEngine that isn't licensed for a required feature, the job will fail.
If you do not use the same license, you must configure monitors to only submit jobs to FlipFactories that are licensed to meet the requirements of the specific factory.

On the licensing Web page, click Obtain License and complete the form once for each FlipFactory server in a load balance group or FactoryArray, and supply the MAC address or hard disk serial number from each server.

The license key enables all the features you purchased, and does not expire. Your license key is keyed to your FlipFactory server's Ethernet MAC address or hard disk serial number you provided to Telestream.

Install the License

When you receive the FlipFactory License File email, open it to verify that the server has the same identifier in your license file, a copy of which is included in the FlipFactory License File email. If the identifier does not match, contact Telestream's licensing department via email or by telephone (see "Support and Information" in About This Guide).

Caution

Do not edit the license file. It may render it unusable.

Follow these steps to install the license on your server (and each server in your load balance group or FactoryArray):

Step 1 Save the attachment (license.dat) in a folder.

Step 2 Copy the file and place it in the FlipFactory license folder (default *C:\Program Files\Telestream\FlipFactory\License*).

Step 3 If you haven't restarted your server after installation, restart it now.
–or–
If you restarted the server after installation, restart FlipFactory service:

Step 4 Click Start > Settings > Control Panel to open the Control Panel window.

Step 5 Open Administrative Tools and launch Services.

Step 6 Select FlipEngine and stop and restart the service (right-click to start and stop, or use the icons in the Services toolbar).

UPGRADING YOUR FACTORIES

Factories in the Manage Factories window display text in red when they have components of the factory (monitors, codecs, destinations, etc.) that are obsolete due to upgrades or update pack installations in FlipFactory.

The Update Process

To upgrade a factory to the current version, right-click on a specific factory or right-click on the Factories node for all factories and select Upgrade.

As the upgrade processes each factory, it displays a progress dialog. When changes are complete, the modified factories are highlighted in yellow to distinguish them from others. You should review them for accuracy and run test jobs through them to validate correct operation.

Click Save to save all of the upgraded factories in your account.

Using Saved Account Files

Each time you save changes, the previous factory settings are saved in an XML file in the <FlipFactory Install Dir>\XML\accounts\backup directory. The XML file is time-stamped to make it easy to identify.

You can import an existing account in two ways:

First, delete the account in Administer Accounts. Then, copy the account XML file into the *C:\Program Files\Telestream\FlipFactory\XML\accounts\import* directory. The file will be automatically imported only if an account with the same name does not exist.

You can also import an account using Telnet. See “Importing Accounts” on page 10–9 for details. This method will overwrite existing accounts.

Automatic Account Upgrades

To enable automatic account updates, log into the FlipFactory console, display System Settings under Advanced Settings (bottom), select Automatic Account Upgrade. Check Enabled to cause FlipFactory to upgrade all accounts on startup.

For large accounts, this process may take as long as 20 or 30 minutes (depending on size of course). During this time, FlipFactory will not accept jobs for processing.

Manually Rebuilding Factories

Some factories and editor panels may not upgrade automatically or elements of the editor panel may not display and you will need to manually rebuild these factories.

INSTALLING THE FLIPFACTORY CONSOLE

Before you can use FlipFactory, you need to install the FlipFactory Console - referred to informally as the *console*. You typically install the console locally on the Flip Server. Additionally, you can install the console on other workstations on the LAN.

Note

Java Runtime 1.5 is required on all workstations where you install and run the FlipFactory console. The JRE installer is available at www.java.com.

To install the FlipFactory Console locally or on another workstation on the LAN, follow these steps:

Step 1 **Local Installation**: double-click the Install FlipFactory Console shortcut on the desktop
– or –
Open a Web browser and enter http://localhost:9000.

Remote Workstation Installation: Open a Web browser and enter http://<FlipServerHostName|IP Address>:9000. Enter the host name or IP address of the Flip Server you want to manage from the console.

Note

The first time the console launches after installation, the Security Warning window may display. Click Always to continue. (Click More details to view certificate information).

Figure 2–1. Java Security Warning window

Step 2 Click Always to continue if you trust the Telestream certificate. For details about the certificate, click More Details.

Step 3 On the FlipFactory Console Installer Web page, click Install FlipFactory Console. (For details, see Installing the Console on Local FlipEngine (page 6-9).

When installation is complete, a Telestream > FlipFactory > FlipFactory Console entry is installed in your Program menu. A Console shortcut is also added to your desktop. Telestream recommends that you name the console shortcut with the name of the FlipFactory server, to uniquely identify which FlipServer this console connects to.

After the console has installed, the FlipFactory console should display:

Figure 2–2. FlipFactory console

Step 4 Select Demo from the Account dropdown menu in the bottom panel. Click Login to test connectivity. There is no password on the Demo account by default.

Caution

Do not log on to the same account on two different workstations and edit factories – the last one to save will destroy the earlier editor's changes.
However, you can view factories, submit jobs, and view status windows when logged on to the same account.

VALIDATING INSTALLATION

After installing FlipFactory, the FlipFactory console, and installing the license, run the FlipFactory console and log on to the Demo account to validate that:

- The FlipFactory console security certificate is accepted, and the console operates correctly
- The FlipFactory build and version number are correct
- The license is correctly installed
- You can log on as an administrator and view accounts
- You can log on as a user and view factories

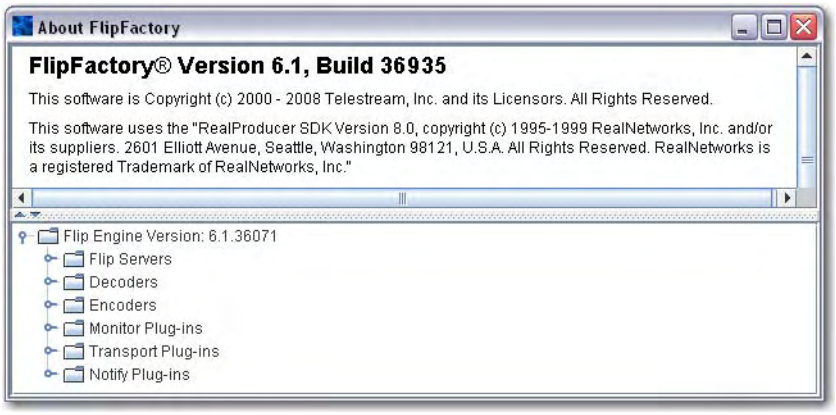
Step 1 To run the console, select Programs > Telestream > FlipFactory > FlipFactory Console. Or, double-click the Console shortcut on your desktop.

The FlipFactory console should display:

Figure 2–3. FlipFactory console

Step 2 Click About to display the About FlipFactory window.

Figure 2–4. FlipFactory About window



Step 3 Validate the FlipFactory version and build number (your build number may be different than the number displayed in <HT_Blue>Figure 2–4, above).

Note

If the console displays the version previously installed, you probably did not uninstall the console. See Uninstalling FlipFactory on page –1. Then, return to step 1 and try again.

Step 4 In the bottom panel, open several of the objects in the FlipEngine discovery tree to display the license status. Each object should indicate that it is licensed. If the license status displays *Not Licensed*, you have not yet obtained a valid license or it is not installed in the correct directory.

For details about obtaining and installing a license, see “Obtaining and Installing the FlipFactory License” on page 2–14. For further assistance, contact Telestream by sending an email or calling the licensing group (“Support and Information”, in About This Guide).

Step 5 Close the About window.

Step 6 In the Administrators panel, click Administer Accounts to display the Administer Accounts window.

Note

The first time you click any administrator icons after launching the console you must log on to FlipFactory as an administrator using the Connect window.
To modify the administrator user name and password, see Changing the Administrator’s Password on see Changing the Administrator’s Parameters on page 7-26.

The first time you click any administrator icon after launching the console, the Connect window displays and identifies the name of the server where FlipFactory is running.

Figure 2–5. Enter administrator user name and password to log on

The default user name is administrator, and no password is assigned.

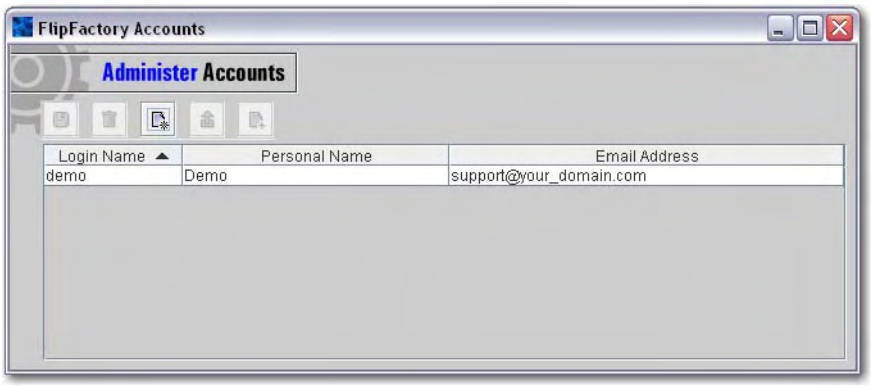
Step 7 Log in to FlipFactory as an administrator. Enter the default user name (*administrator*). There is no password associated with this user name.

Caution

For security purposes, be sure to change your administrator username and password immediately after installing FlipFactory *(see Changing the Administrator's Parameters on page 7-26).*

After logging in, FlipFactory displays the Administer Accounts window.

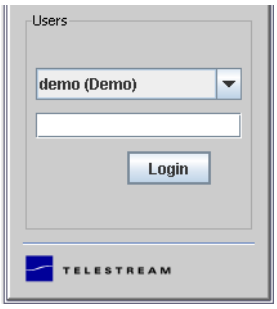
Figure 2–6. Administer Accounts window



Step 8 The Administer Accounts window (Figure 2–6.) should display the single default user name supplied with Telestream, *demo*.

Step 9 Close the Administer Accounts window and display the console again.

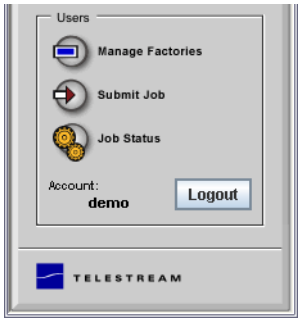
Figure 2–7. FlipFactory User panel before logging in



Step 10 With Demo (demo) selected (the default FlipFactory user), click Login to log on to the Demo account as a user.

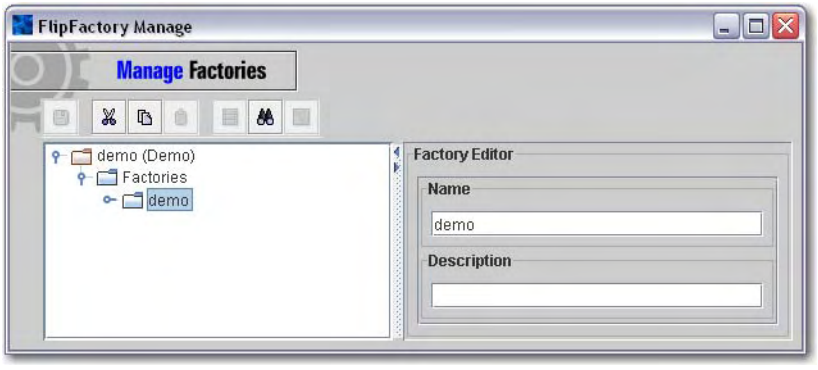
After successfully logging in to a user account, FlipFactory changes the user panel to display user icons:

Figure 2–8. Users panel when logged on to a user account



Step 11 When the panel displays the Users icons, click on Manage Factories.

Figure 2–9. Manage Factories window



The Manage Factories window should display the default FlipFactory factories, as shown above (Figure 2–9.).

Step 12 Close the Manage Factories window, click Logout, and close the console.

UPDATING FLIPFACTORY – INSTALLING UPDATE PACKS

From time to time between major releases, Telestream updates FlipFactory via update packs. The version number remains the same (Version 6.1, for example).

The purpose of installing update packs is to obtain new features, codecs, and updates to software to improve performance, add new features, or fix problems that have been identified, and to preserve your FlipFactory registry settings and your FlipFactory database – including accounts, factories, and job history.

Caution

You should only install update packs for the FlipFactory version you are using.

Registered users can obtain update packs by following these steps:

Step 1 Go to www.telestream.net/products/flipfactory/default.asp and log in with your authorized user name and password.

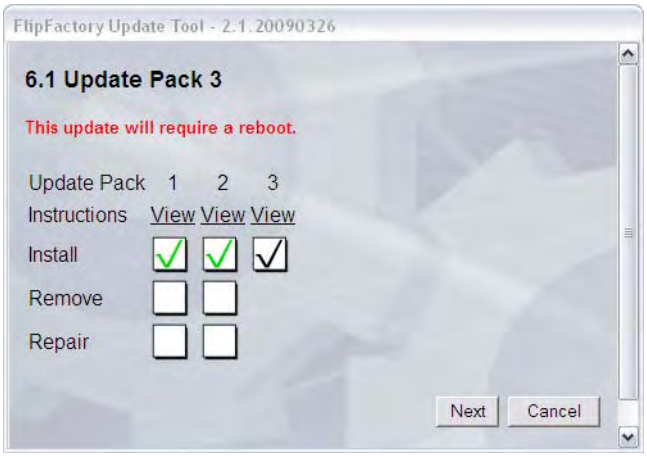
Step 2 Click on the link for your version of FlipFactory.

Step 3 Click on the Updates link at the bottom of the page for your version of FlipFactory.

Step 4 Review the updates in the Available Updates column at the right, and click to open or download the zip file.

Step 5 Open the Instructions Web page for a list of components in this update pack and follow the update instructions to complete the update (double-click *setup.hta* to install the update pack).

Figure 2–10. Update Pack Installer window



The installer will automatically install all previous update packs (indicated by green arrow) if necessary. Check the current update pack, and click Next to install it.

Step 6 Review the release notes that accompany this update pack.

Step 7 Upgrade the existing factories in your accounts (page –17). This process analyzes each component of pre-existing factories and updates them to replace old components with new versions in this update pack.

Step 8 Re-install any remote FlipFactory consoles (page –18).

Step 9 Validate the FlipFactory installation (page –20). After installation is complete, perform a specified series of tests in FlipFactory to validate successful installation.

CHAPTER 3

Guided Tours

The more you know about FlipFactory, the better it will serve your needs. In these short guided tours, you'll learn how FlipFactory is designed to work. You'll learn how managers can create accounts and how you can build factories to manage your workflow and process media – including monitors to automatically submit media without human intervention.

When you've completed the tours, you'll be ready to create accounts for your organization and build factories for the kinds of jobs you need to process. Next, you'll be able to submit and monitor jobs as FlipFactory goes to work – automatically transcoding and delivering your media – to the right place at the right time.

Tours

Note

The tours in this chapter use the default FlipFactory installation and the Demo account and demo factory. Features of FactoryArray are not used in these tours. For details about FactoryArrays, see the FactoryArray User's Guide.

[TOUR 1] FLIPFACTORY BASICS

FlipFactory operates on a client/server model, employing a central server or several distributed servers (in the case of a FlipFactory group or FactoryArray) often called FlipEngines to perform its work.

This architecture provides scalability and durability – from a single server and a client for one user, to multiple servers and clients for many users, each using FlipFactory in the manner they choose.

You use a client – the FlipFactory Console (often referred to as *console*) to – directly on the FlipFactory server, or on another Windows computer on the LAN – to set up, configure your factories and submit jobs.

FlipFactory Server

The server portion of FlipFactory consists of two programs – *flip server* and *FlipEngine*. The FlipEngine is responsible for interacting with the client, maintaining the FlipFactory database and processing jobs as they are submitted. The flip server is the workhorse of FlipFactory. It accepts jobs from the FlipEngine and transcodes the input media into the appropriate output media. These jobs are prioritized on a first come-first served basis.

FlipFactory runs on Windows platforms with fast media drives and access to a LAN and/or WAN. For practical purposes, the FlipFactory server programs are collectively often referred to simply as *FlipFactory* or *FlipEngine.*

To accommodate departmental transcoding jobs or to increase system durability and/or job capacity, you may install several independent FlipFactory systems, each operating on different servers. Each FlipFactory operates as a stand-alone implementation and does not interact with other FlipFactories.

FlipFactory Groups and FactoryArrays

In some cases, a single FlipFactory meets the needs of all the personnel in a department or organization. In high-volume, high-workload environments you can balance workloads and improve efficiency by installing multiple FlipFactory servers on a network and organize them to create a *FlipFactory group*.

You can also purchase a license and implement a FactoryArray to add additional services to a FlipFactory group, including job and monitor recovery, and database mirroring and recovery, based on your requirements.

The FactoryArray Database Mirroring (FADM) service enables you to safeguard your FlipFactory database against hardware and system failures. The FADM ensures that your database is always mirrored in real-time, and automatically switches to the mirrored version whenever the primary database is unavailable. As a result, your FlipFactory

environment will always have seamless, fault-tolerant database support. This feature is a licensed feature available to FactoryArray customers.

FlipFactories in a group or array are coordinated to use a central FlipFactory database and individually configured for load balancing to optimize the efficiency of the entire FlipFactory group.

Note

The FlipFactory database is a SQL Server 2005 database. By default, it is installed on the same platform as FlipFactory. However, it may be installed on another server and accessed remotely to accommodate an existing database or to improve up-time availability, by isolating services to reduce the risk of failure of one component affecting the availability of others. This is particularly effective in a load balance group or FactoryArray.

Because jobs submitted manually, or automatically from monitors, may be sent to any FlipFactory in the group/array, each FlipFactory should have access and credentials to the same set of network resources.

If you do not use the same license on all Flip Engines in the group/array, be sure to configure monitors to only submit jobs to FlipEngines that are licensed to meet the requirements of the specific factory, or the job will fail.

Additionally, you should not create factories using Local Folder monitors, or submit jobs manually using the Local Files option.

Note

For details about setting up and configuring a FactoryArray, see the FactoryArray User's Guide.

For details about setting up and configuring a load balance group, see *Implementing a Load Balance Group (page 9-2)**.*

FlipFactory Client – the Console

The FlipFactory console (usually referred to as the *console*) is a Java program. Multiple users can use the console to access FlipFactory, build or modify factories, and submit jobs for transcoding media (*flipping*). A client station only requires a Java Runtime Environment to install and display the FlipFactory console – it does not require additional software.

Note

Always remember to save changes to your FlipFactory settings and factories before closing the Manage Factories window.

Figure 3–1. The FlipFactory console

End users (*Users* in the console) use the FlipFactory console to configure the system, manage accounts, build and update factories, and submit and monitor media processing jobs. FlipFactory provides password-protected accounts for security, and to separate factories or groups of factories by department, project, or workflow. You log into a FlipFactory account to begin your work.

Caution

FlipFactory does not prevent users from logging in to the same account on different workstations. Each user should only use their assigned accounts, or you should assign specific accounts to a specific workstation. If two users log on in to the same account at the same time and save changes, only the last changes are saved.

FlipFactory Accounts & Factories

You create and use accounts in FlipFactory to manage job workflow. Accounts identify users or groups submitting jobs and are used to improve job monitoring and management. For example, a television network may have three accounts to manage its jobs: one for affiliate jobs, one for news, and one for advertisements.

Workflow is controlled on a job-by-job basis, and jobs are submitted to specific factories – the rules of how to perform a specific type of job. These factories are built by account owners and stored in their own account. Each account may have one or more factories, each set up to

process specific types of jobs. For example, you might set up a factory to produce Windows Media, another for QuickTime media, another for DVD media, and yet another to produce frame-accurate editable proxies.

Factories Perform Six Transactional Tasks

Each factory performs six separate tasks for each job it processes:

Step 1 Monitor file systems for new media

Step 2 Accept and automatically submit media processing jobs (you can also submit jobs manually)

Step 3 Localize media for processing

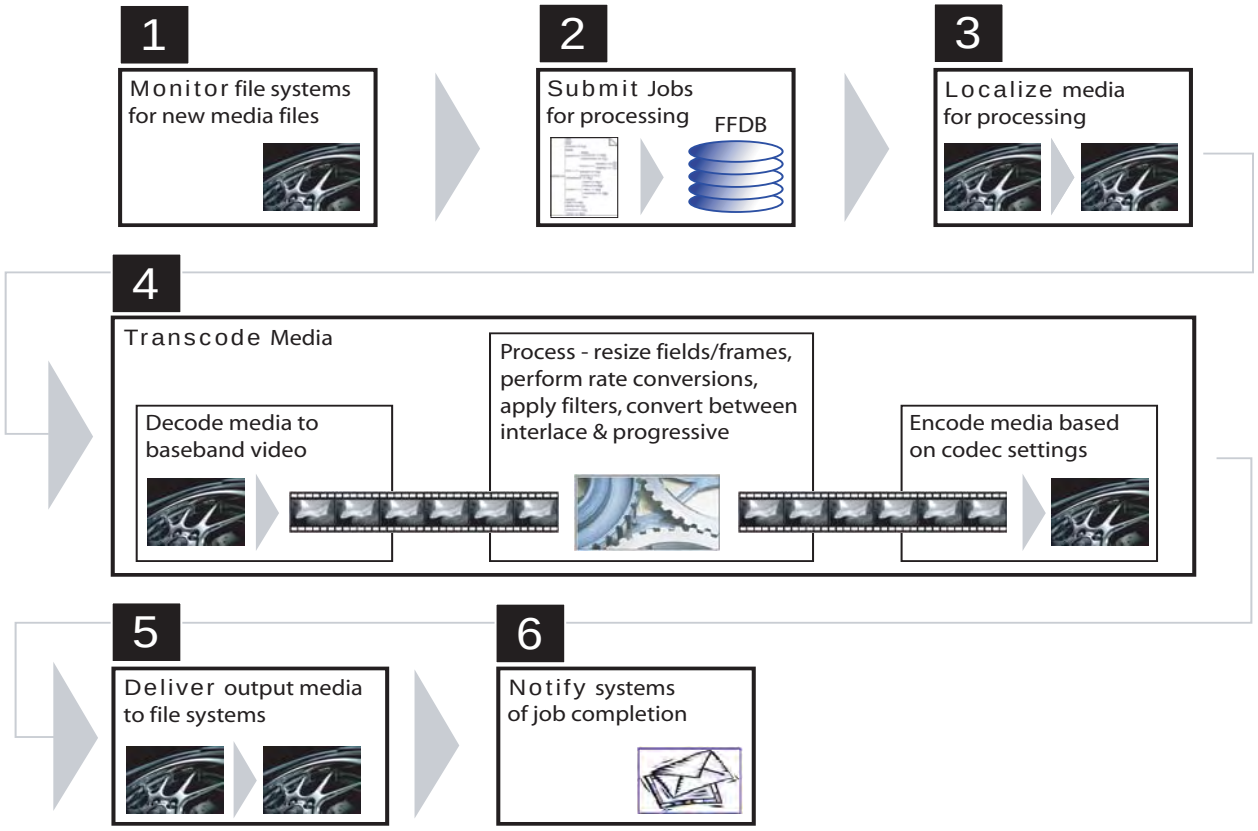
Step 4 Transcode Media – multiple steps in a single atomic transaction, including decoding, transforming field and frames, and encoding. Optional metadata processing is part of the transcoding process.

Step 5 Deliver media

Step 6 Notify systems

These steps are performed linearly, and each step must complete normally before the next transaction can execute.

Figure 3–2. FlipFactory jobs have six steps to transcode media



Monitor FlipFactory may be configured to constantly check directories (local or network, or devices including broadcast servers, editing systems, etc.) for new media files that have been saved in a *hot folder* (the target directory being tested by a FlipFactory monitor process) to be processed by FlipFactory.

Accept FlipFactory accepts jobs for processing. These jobs are submitted automatically, by monitors you have created, or submitted manually by you any time you want. In a FlipFactory group/array, each FlipFactory server collaborates with other FlipFactories to determine which factory is best suited to execute the job, based availability and server load.

Localize FlipFactory in almost all cases duplicates the input media file to a *store* – a specific directory (local or on a share) that is identified to the FlipFactory server, to optimize file access and speed decoding.

Transcode (Create a Product) FlipFactory uses a FlipFactory Server to automatically detect which decoder to use for incoming media. The input to the transcoder is baseband video, which it resizes, performs frame rate conversion, applies process/analyze tools and enabled filters, converts between interlace and progressive, and performs other tasks to produce new fields or frames as appropriate.

Then it passes the newly generated fields or frames to the encoder, which then encodes the media based on your product settings: the media format, selected movie, video, and audio codecs per their configuration; then saves the output. This decode-encode process is called transcoding, or *flipping*. In case of errors or failures, FlipFactory automatically restarts at checkpoints to complete the task.

Deliver When the job is complete, the delivery instructions (called *destinations*) are executed. The output may be stored locally, on a network server, FTPd to a remote server, or delivered to a variety of devices: broadcast servers, editing systems, etc. Multiple delivery locations are not uncommon.

Notify Based on your requirements, you can configure FlipFactory to notify systems including automation servers by various methods (including email, dub lists, and XML files) to advise of media delivery, and optionally, actual media deliver to certain server types.

FlipFactory uses both Destinations and Notifications to move output media to its proper location after the job is complete. FlipFactory occasionally uses a Notification rather than a Destination to deliver media when the delivery method involves a proprietary API or more complex set of functions than a simple file transfer.

To perform each task the way you want it to, you configure Monitors, Process/Analysis, Products, Deliveries and Notifications in a factory.

After your factory is created and configured for a specific output specification and workflow, you submit jobs to the factory to transcode your media.

Submit methods include:

- Automatically, from a monitor accepting new media from Vyvx, DGSystems, FastChannel and other edge servers, plus FTP folders, network and local folders, broadcast servers, etc.
- Manually, from the FlipFactory console via the Submit Job window
- From a Telestream Clip video appliance (ClipMail appliances are used to acquire video from baseband sources, such as a live transmission or a professional VTR, and automatically send them via LAN or WAN directly to FlipFactory for processing)
- From a video file attachment sent via email and received by FlipFactory, submitted directly to the factory of your choice
- From a Pipeline encoding video in real-time or from a Pipeline EDL
- Through the FlipFactory API implemented in custom or third-party applications.

Automatic Job Recovery & Completion

In the event of a FlipFactory failure, each FlipFactory recovers its job in progress beginning at the last complete checkpoint when it re-starts. Auto-recovery and completion significantly reduces monitoring and restarting of jobs, and increases throughput.

If the failed FlipFactory is part of a FactoryArray, another FlipFactory in the array will re-start the failed FlipFactory's monitors and re-start any jobs that the failed FlipFactory that have not yet completed to keep the entire workflow operating correctly.

[TOUR 2] FLIP YOUR FIRST MEDIA FILE

This tour takes 10 or 15 minutes, and illustrates how to transcode (*flip*) a media file using a factory provided for you. This tour describes how to log on to an account, view a factory, and submit and monitor a transcoding job. It's a great way to become familiar with the FlipFactory console – and process – without getting bogged down in the details of media transcoding.

To take this tour, you should be using the console on the local FlipServer.

Step 1: Start the FlipFactory Console

You can start the FlipFactory console in two ways:

- Double-click the FlipFactory Console shortcut on the desktop
- Click start > Programs > Telestream > FlipFactory > FlipFactory Console

Note

If you haven't installed the FlipFactory console, follow the steps in Installing the Console on Local FlipEngine (page 6-9) before taking this tour.

The first time the console launches after installation, the Security Warning window is displayed. Click Always to continue. (Click More details to view certificate information).

Click the About button to display the About Window, which provides details about this FlipFactory installation, including all of its capabilities. For example, click the Encoders, then File to display all of the file codecs that are installed. Open a specific codec (3GP for example) to display its version and license status.

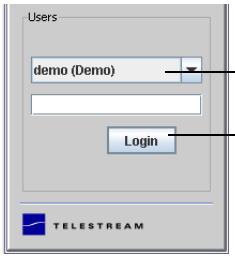
Now, close the Encoders, and open the Monitors to display all of the monitor plug-ins installed. Now, lets close this window and continue.

Click the Help button to display the FlipFactory User's Guide PDF document. This is a comprehensive reference to all of the features of FlipFactory. Take a moment to browse around, and then continue.

Step 2: Log in to a FlipFactory Account

To begin, log into the Demo account. This account has no password.

Figure 3–3. User's Log in panel at bottom of console



Select Demo from the dropdown menu of users.

Click Login to log on to the Demo account.

In the Users (bottom) panel, select Demo from the popup list of accounts.

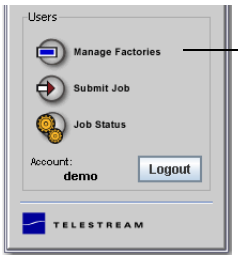
Click Login to log in. When you log in, FlipFactory displays the following functions: Manage Factories, Submit Job, and Job Status.

Step 3. Review the Demo Factory

Jobs are processed by factories you create. Each factory is set up to produce a specific type of media from your input.

Click Manage Factories to display a list of factories in this account, and create new ones.

Figure 3–4. Manage Factories button in console User's panel



Click Manage Factories in the Users panel to display the Manage Factories window, where you create, build and manage factories.

The top folder identifies this account. Open the Factories folder to display the list of factories that have been created in this account. In this demo account, there is only factory – *Demo*.

Note

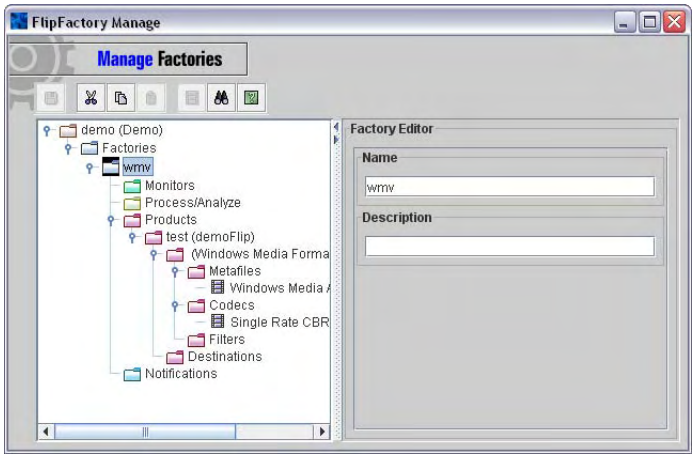
The product in your Demo factory may vary. If you performed a clean install, your Demo factory produces a Windows Media file. If you upgraded an older FlipFactory server, your Demo factory may produce a similar Real Media file.

If you want a demo factory to produce a WMV file, use the example in this tour to make your own WMV factory.

Open the Demo factory, then open each succeeding folder (color-coded for clarity) to display objects inside to get a sense of how factories are organized. There is a permanent folder (and optionally, more than one),

for each task a factory performs as it processes jobs: Monitors, Process/Analyze, Products, Destinations, and Notifications.

Figure 3–5. Manage Factories window



Click on each type of folder and object. Notice that some folders and objects display a tabbed editor panel where you can configure it. Each factory is created with five building blocks:

Monitors

Monitors periodically query specific directories on various servers to watch for incoming media; perform localization and submit the media to the factory to begin the transcoding process.

There are no monitors in this factory. Jobs are submitted to this factory manually, using the Submit Job window. Click Monitors to display a tabbed panel of the types of monitors you can create. Take a moment to click on some of them and read about their settings.

Process/Analyze Tools

The Process/Analyze component includes analysis tools for video thumbnails, audio level, vertical blanking and others.

There are no processes in this demo factory. Click Process/Analyze to view the list of analyses that may be performed.

Products

The Products component is configured by you to specify audio and video codec parameters, metadata, and pre-processing filters – everything necessary to encode the incoming media correctly after it has been decoded and produce an output file in the file/wrapper format you specify.

You do not have to configure or specify the input media format or encoding details; FlipFactory automatically detects this information.

The product (*media/wrapper format*) this factory produces is Windows Media. Click each folder and object and review the details.

The destinations component in each product specifies where (and how) to deliver the completed media – which may be multiple locations by multiple methods.

The destination for the output media in this tour is set to a local directory: *C:\Program Files\Telestream\FlipFactory\Http\Media*.

Destinations

For each product, you can identify a specific destination, which is a directory on a local or network server, or media systems including catch servers, on-air servers, ClipMails, and email address, and other specialized computers.

If you don't specify a destination, the product (the newly-encoded media file) is stored in the default store (usually, *media*).

If you want to play media directly from FlipFactory (using the Play button in Message Viewer and Job Status or Resubmit/Forward windows), you must specify Web Server Local as the destination for your proxy products or manually provide a URL in the Alias URL field. This creates a URL to identify the file for FlipFactory's built-in Web server.

Notifications

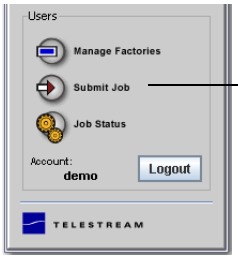
Notifications initiate processes in other digital media systems after job completion. Notifications may target other factories, dub list generation, VideoLogger, ClipMail, Reuters and other systems. You may click the folder and view the various notification methods that are available.

For this tour, don't make any changes to the account. Close the Manage Factories window when you're done checking out the demo factory.

Step 4: Submit a Job

Now you're ready to view the Submit Job window, become familiar with its important input fields, and submit your first job.

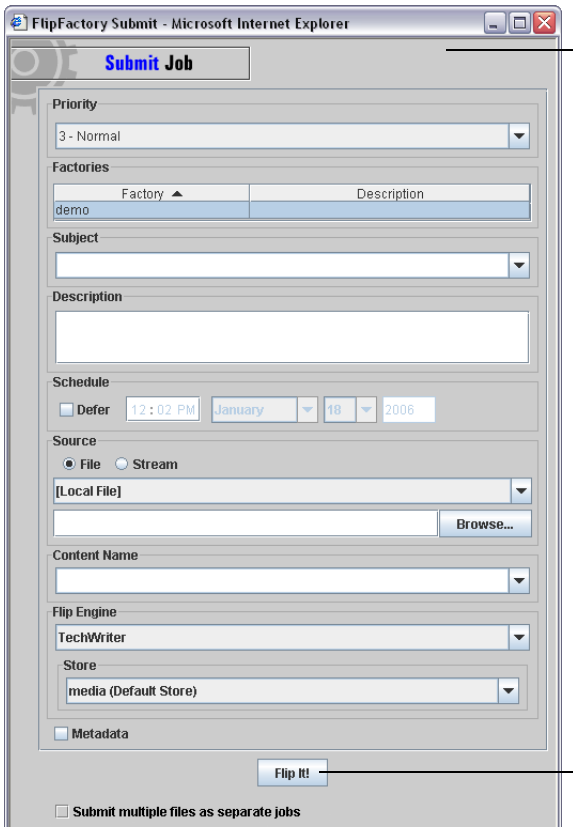
Figure 3–6. Submit Job button in console User's panel



Click Submit Job to display the Submit Job window, where you enter details about the job you're submitting.

In the Users panel (bottom of console), click Submit Job. FlipFactory displays the Submit Job window.

Figure 3–7. Submit Job window



Select options and enter details about the job in the Submit Job window.

Click Flip It! to submit the job for transcoding.

In the Factories near the top, notice that the WMV factory is already selected, because its the only factory in this account. When you have more than one factory, select the factory you want to use for processing this job. Optionally, select a priority for the job (it defaults to Normal).

In the Subject field enter a subject – *testflip* for this tour, and optionally, enter a description.

Use the Schedule area to defer a job for processing until later. If you don't want the job processed immediately when you submit it then check Defer, and enter schedule information. For this tour, leave Defer unchecked so that the job will be processed immediately upon submission.

In the Source field, make sure File (as opposed to Stream) and Local File is selected. Click Browse and locate the sample file *FlipDemo.mss* in *C:\Program Files\Telestream\FlipFactory\http\Media*.

In the Content Name field, provide the new clip a name – enter *testflip*. FlipFactory appends the output file name with the appropriate suffix.

The FlipEngine popup list contains the names of all FlipFactory servers in the group, plus the option Any Available.

The Store popup list displays all stores for this FlipFactory. In a default installation, there is a single *media* store which defines the drive and directory where media is localized (copied to the specified drive) for processing and delivered when complete if there are no other destinations.

For this tour, do not enable metadata.

Step 5: Flip It!

Click the Flip It! button at the bottom of the window to submit the job to FlipFactory. The console notifies you of any errors in the job, or displays the Status dialog.

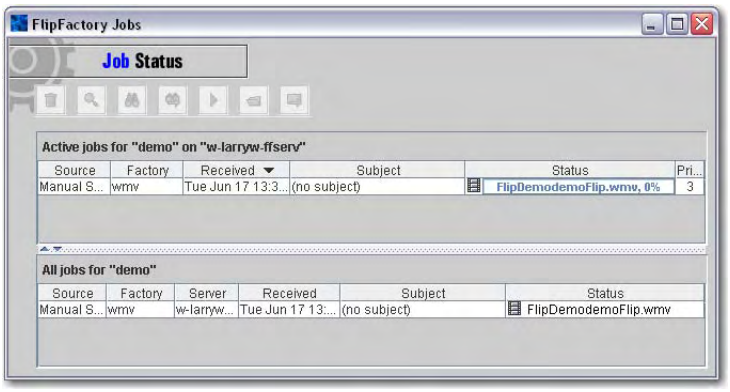
Figure 3–8. Job submission confirmation dialog

FlipFactory accepts the job and submits it for processing. Click OK to continue, and close the Submit Job window.

Step 6: View Job Status

View the Status of the job you just submitted, click Job Status (located in the User panel). FlipFactory displays the Job Status window.

Figure 3–9. Job Status window



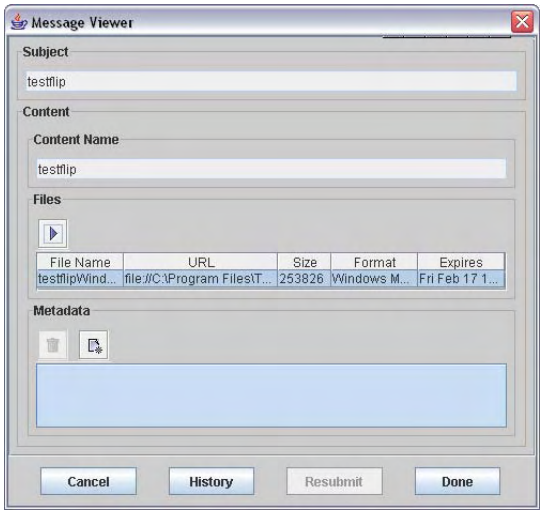
The Job Status window displays jobs that are in progress in the upper (Active Jobs) panel, and displays all jobs in the lower (All Jobs) panel. You click a job to select and manage it, or double-click it to view job details in the Message Viewer window.

Step 7: Display Your New Clip

When the job is complete, the media has been converted from MPEG4 to Windows Media by the default encoder, and you can view your new clip. Double-click the *testflip* job in the All Jobs panel of the Job Status

window to display the Message Viewer window and details about each product (new media file) in the job.

Figure 3–10. Message Viewer window



Since you didn't specify a destination, the new media file was stored in the default media store, inside a folder created with a name to specifically identify this job. You can't click the Play icon (right arrow) to play the clip, because no URL was created by using a specific destination and supplying the Alias URL (one is provided automatically if you choose Web Server (Local) destination.

Go to Program Files\Telestream\FlipFactory\http\Media (the default directory identified by the default store, *media*). Locate the folder that is named *FlipDemo.wmv<date/time stamp>* and open it. Locate the file

FlipDemodemoFlip.wmv and double-click it to play it in Windows Media Player.

Figure 3–11. Windows Media Player plays the media you flipped

Now that you've viewed a factory and learned how to submit and monitor jobs, you're ready to build your own factory (including a Destination) and process another job.

[TOUR 3] CREATING A FACTORY

This tour takes about 20 minutes and introduces you to the process of building and configuring a factory. In this tour, you'll build your first factory, and configure it to monitor a local folder, transcode the media that is added to the local folder, and deliver the new output media to a local folder destination.

This tour is designed to introduce you to FlipFactory's features, and acquaint you with factory building and management – the skills you need to implement FlipFactory in your environment.

You'll set up this factory with a *monitor*. A monitor is a process in FlipFactory that you configure to continually poll a source location (such as a broadcast server and directory or local or network folder) for incoming media to process – which FlipFactory does by automatically submitting a job based on your factory settings.

In production, you'll typically set up a factory with monitors to ingest MPEG or DV media from broadcast servers including Leitch and Nexio,

Avid MediaStream, SeaChange Broadcast, Thomson (Grass Valley) Profiles, Quantel QServer, plus Windows local and network directories, and FTP folders.

When new media is identified by the monitor, a job is submitted to convert the media to Omneon format and delivered to its destination.

You can configure a factory to deliver the output media to Omneon Director servers, Thomson (Grass Valley) K2 servers, Windows local and network directories, Samba, and FTP servers, and many others.

Step 1. Start the Console & Log On

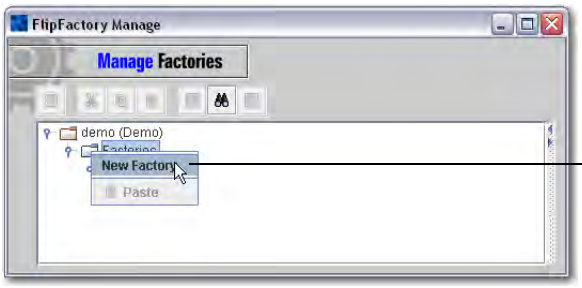
If you closed the console after the previous tour, double-click the FlipFactory shortcut again to display the console.

To begin work, log in to FlipFactory. Because there are no other users and there is no password on the Demo account, just click Login.

Step 2. Create a New Factory

Click Manage Factories to display the Manage Factories window. You use the Manage Factories window to create, build, and manage factories.

Figure 3–12. Creating a factory



Highlight the Factories folder. Then, right-click the Factories folder and select New Factory to create a new factory in the Demo account.

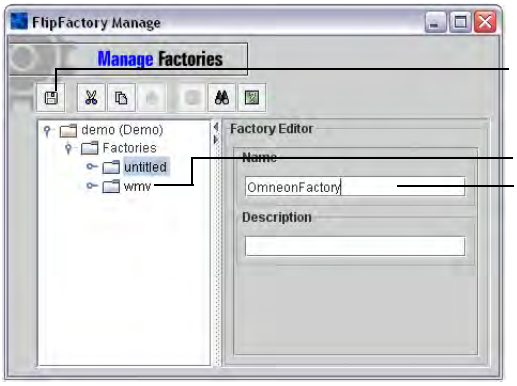
To create a factory, open the demo (Demo) account folder if it isn't already open and select the Factories folder.

With the Factories folder selected, right-click on the Factories folder and select New Factory from the context menu (you can't right-click on folders or objects that aren't highlighted – selected – already). FlipFactory creates a new factory (named *untitled*).

Select the *untitled* factory to display the factory editor in the right panel.

In the Name field, type *OmneonFactory*. Optionally, enter a description.

Figure 3–13. Naming a new factory in the Factory editor panel



Click the Save icon (disk icon, left, at top) to update the information and save your work. Notice that when you change information in your account by creating or changing factories, the disk icon becomes active. Its a good idea to get in the habit of saving your work frequently. Each time you save your work, the FlipFactory database is updated.

Step 3. Set up Monitor and Destination Folders

Before you set up a FlipFactory monitor (a directory on a server that is continually polled by FlipFactory to identify new media files that have been saved in the directory), first open the C drive in Windows Explorer and create a folder; name it *AMonitor*. While you're at it, also create a destination folder so FlipFactory can deliver the transcoded media. Create a new folder on the C drive and name it *ADestination*. You'll use both of these directories – one as a monitor, the other as a destination – in the course of this tour.

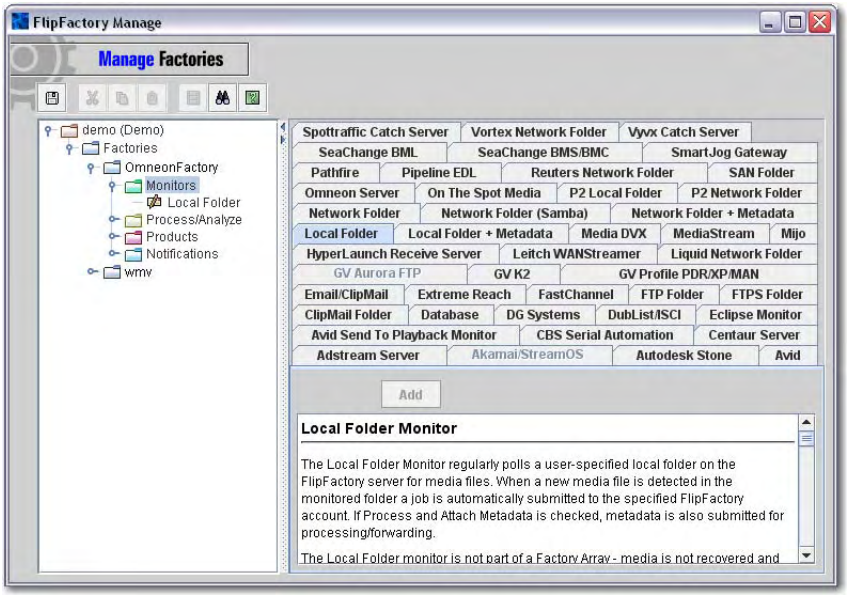
These arbitrary names just make them easy to find – when creating monitor and destination directories you should name them in a practical manner for the workflow you're establishing. You can also put a monitor on network servers or other systems on the network.

Step 4. Add and Configure the Monitor

To add and configure the monitor, return to the Manage Factories window and open the *OmneonFactory* factory. Next, select the Monitors folder in the *OmneonFactory* to display the Monitors editor.

(If the Monitors folder is gray (inactive), you do not have a license or it is not installed in the proper directory. If a monitor tab is disabled, you are not licensed to use it.)

Figure 3–14. Adding a monitor to a factory



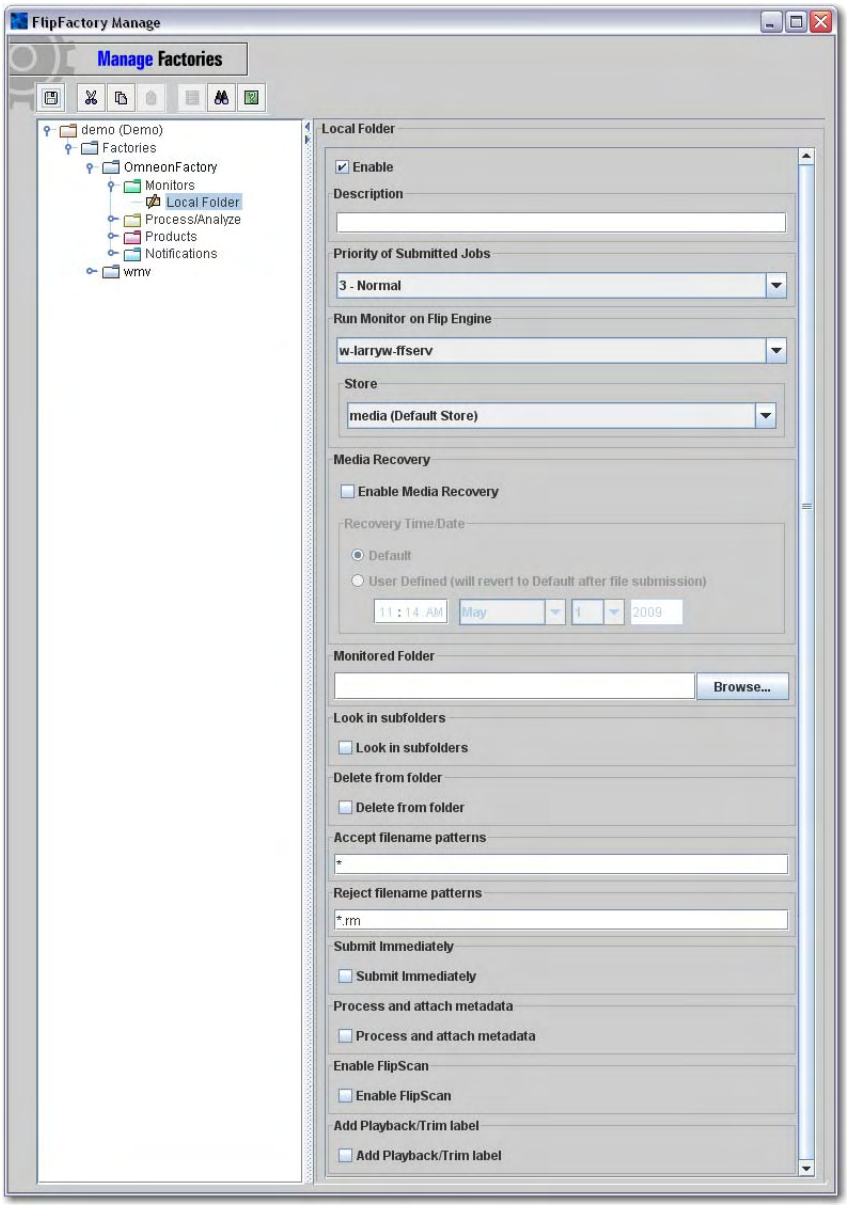
Click the Local Folder tab and then click Add. (You can only add one monitor of each type to a factory.)

When the Local Folder monitor is added, FlipFactory creates a monitor icon in the Monitors folder (named for the monitor type) and then monitors the specified target you configure for new media to ingest as a job, to direct-convert or transcode.

Click the new Local Folder icon directly under the Monitors icon, to display the Local Folder monitor editor panel.(Each type of monitor has a unique editor panel for its settings and configuration requirements.)

Take time to review each of the settings and configuration options.

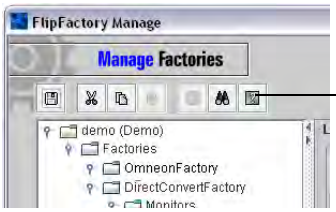
Figure 3–15. Enabling and configuring a monitor in a factory



Notice that you can enable or disable a monitor, specify priority, run the monitor on a specific FlipEngine when configured in a load balance group or FactoryArray, and recover media.

You can also select a specific target system and directory, and determine how to select and process new media, and alternatively, process metadata.

Figure 3–16. Toolbar in Manage Factories for common commands

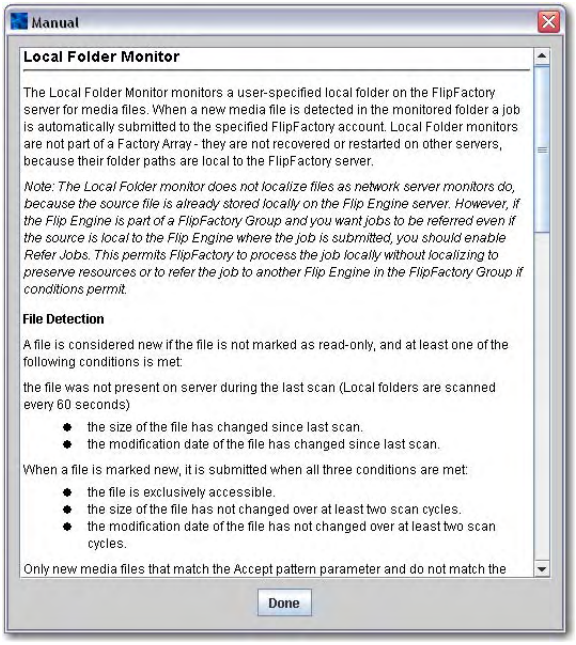


Use the toolbar to save your work, cut, copy and paste factories and factory objects, and display Help.

Using Online Help

Main console pages, as well as each monitor, process/analyze tool, product, and notification has its own online help page. Click the green help button (far right, at top of window in toolbar) to display the Help page for the Local Folder Monitor as you review the editor.

Figure 3–17. Displaying online help in FlipFactory



Each help page describes how to use the monitor or other function in FlipFactory, and describes each setting and configuration option. Click Done to close the window.

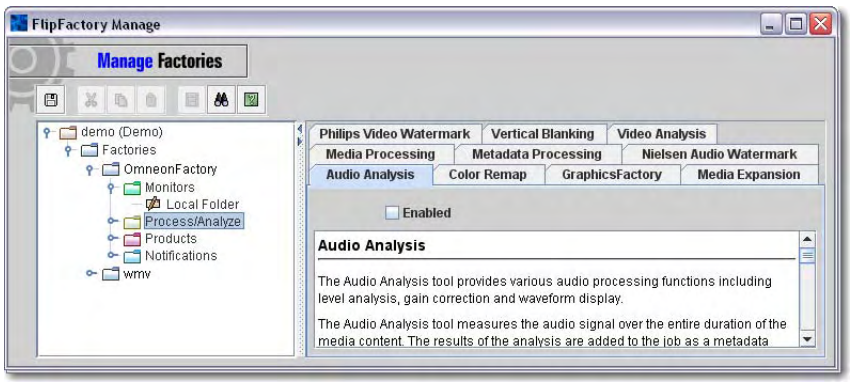
Now, click Browse under Monitored Folder, and locate the folder named *AMonitor* on your C drive and click Select.

Save your work in progress – click the disk icon again. When you save your new monitor, it is automatically started and begins polling the directory you selected. Now you have a folder (AMonitor) to save media into, which your Factory monitor will identify, and submit a job for processing (based on your factory settings) each time a new media file is identified in this folder.

Process/Analyze Tools Operate on Input Media

Before creating your product, take a moment and open the Process/Analyze folder to view the tools that are available to manipulate or analyze the input file. Some tools may not display or be available, depending on your license.

Figure 3–18. Process/Analysis tools operate on input files



You can use these tools to add watermarks, process VBI data, and other special processing. Descriptions of each tool are in the online help pages.

Step 5. Create a Product

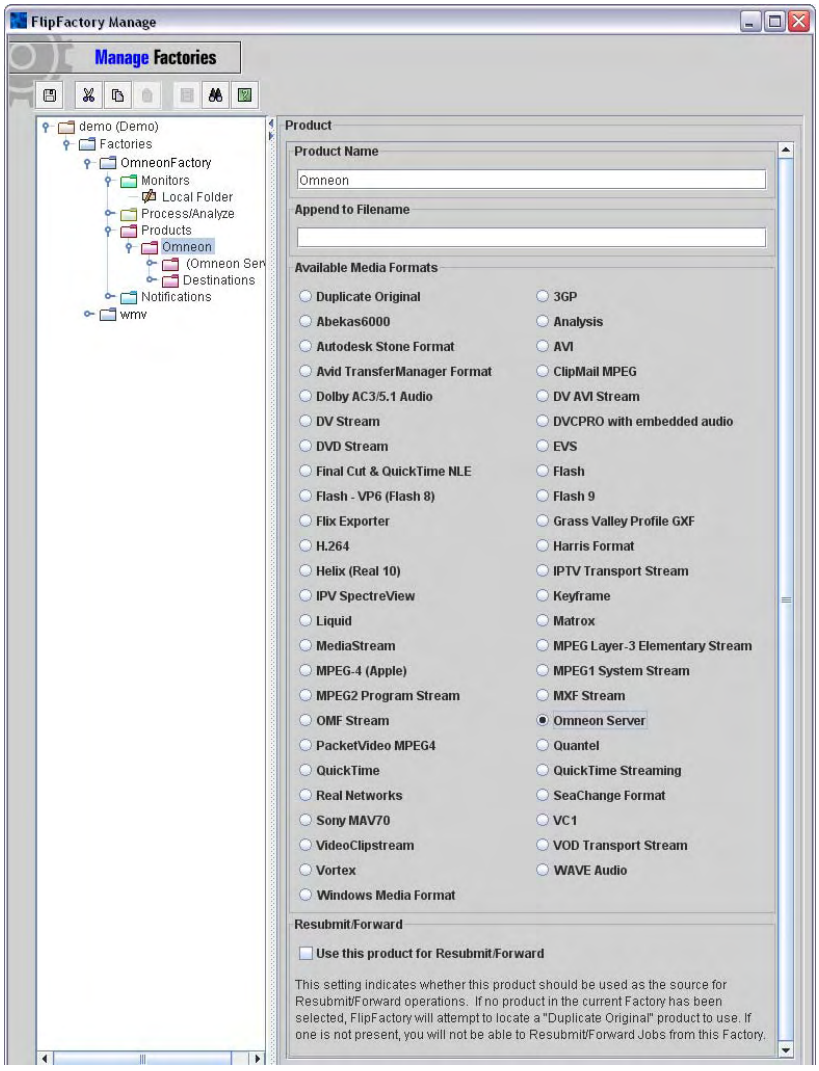
To specify the product itself (how the incoming media is to be converted and saved as a new media file), click the Products folder to select it.

Figure 3–19. Creating a new product in a factory

Next, right-click and select New Product from the dropdown menu.

Open the Products folder to display the new Product folder. Select the Product folder to display the Product selector panel (if only Duplicate Original is active, you don't have a license or it isn't installed correctly).

Figure 3–20. Selecting the media format for your new media



This panel displays all of the different wrappers and/or file formats you can save your media in.

In the Product Name field, type *Omneon*.

next, click to select Omneon Server format.

(You select Duplicate Original when you want FlipFactory to replicate the file exactly (by performing a file copy process) in the destination, without opening the file, changing the wrapper, or altering the essence.)

Save the updates to your factory – note the name change of the folder from *Product* to *Omneon*.

Now, open the Omneon folder and open its Format folder (named for the product type you selected – Omneon Server) to display three folders: Metafiles, Codecs, and Filters.

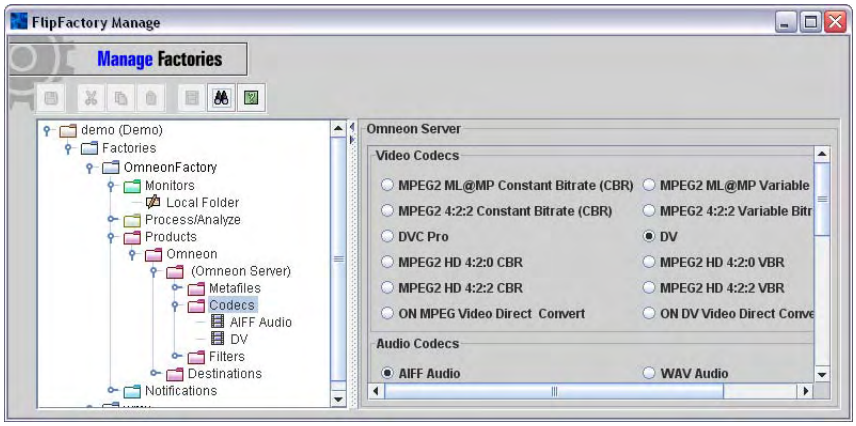
The Metafiles folder is for codecs that utilize Redirector metadata.

The Codecs folder is used to specify how you want to transcode the video and audio essence by selecting and configuring the encoders.

The Filters folder allows you to perform various essence-manipulation during the transcode process, including visual effects (saturation, sharpening, telecine, etc.) and other utilities including frame order conversion, text overlays, and others.

Select the Codecs folder to display the codec list editor.

Figure 3–21. Codec selector panel (typical)

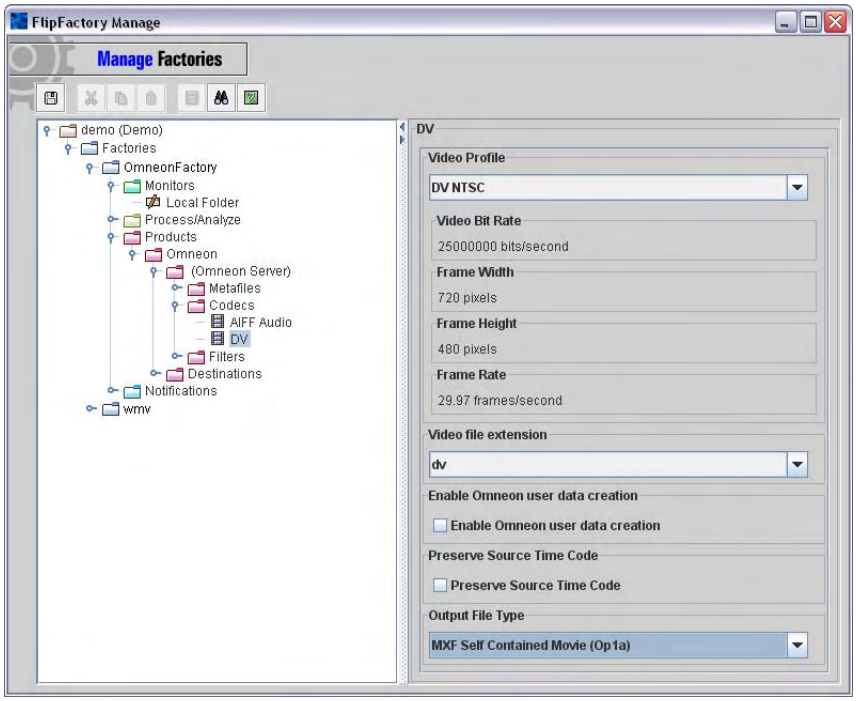


Select the DV codec for this tour.

You can also select AIFF or WAV to configure the factory to wrap the audio correctly on output. In this tour, select AIFF (default).

Next, open the Codecs folder to display the codecs you've selected and select the DV icon to display the video codec editor panel.

Figure 3–22. Typical video codec editor panel



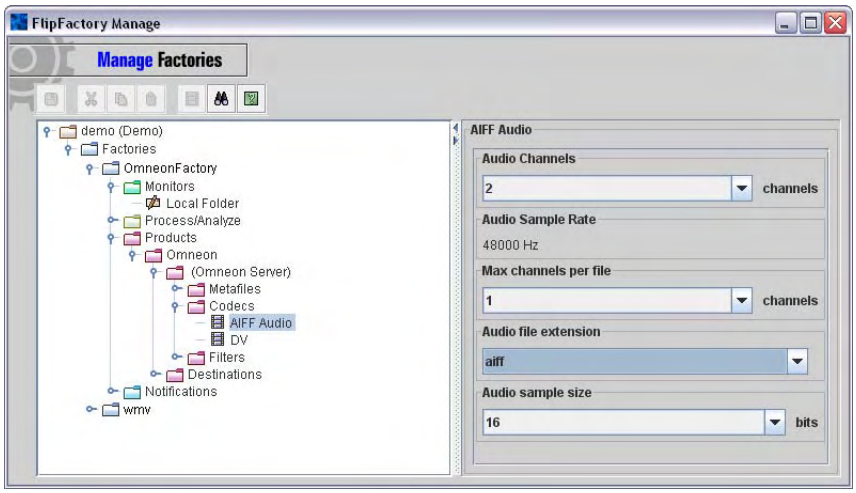
This is a typical video codec editor panel – each video codec has a unique set of configuration and settings options, based on the codec itself.

In this panel, you can select the output file type – an MXF self-contained (Op1a) movie or a self-contained or reference QuickTime movie.

If you made changes, click Save and continue.

Next, select AIFF Audio to display the audio codec editor panel.

Figure 3–23. Typical audio codec editor panel



This is also a typical audio codec editor panel. You can make the following changes in the audio codec editor:

Select the number of channels you want in the output – up to 8 (based on how many channels you have on input).

You can also select the maximum number of audio channels per file.

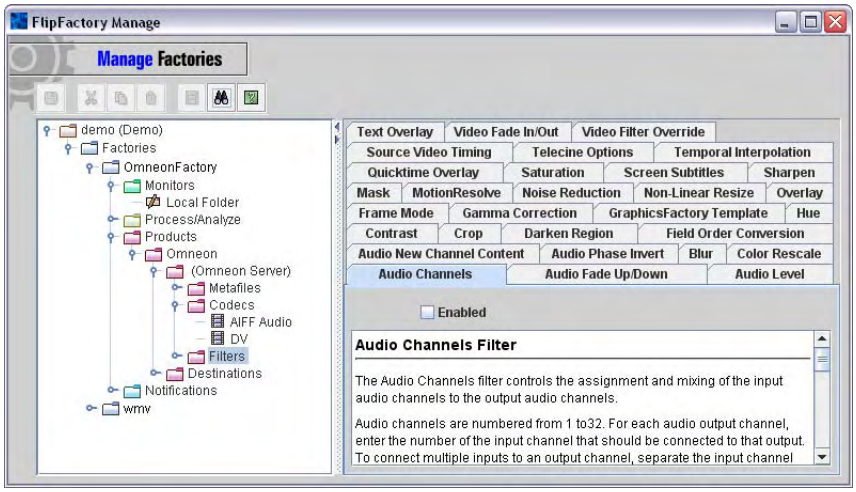
The sample rate for output is fixed at 48 kHZ.

If you made changes, click Save and continue.

Filters Operate on Output Media

Now, select the Filters folder to view a list of filters you can use. Filters always operate on output media, to alter the visual or audio quality of the video. That is why filters are always enabled on a given product, while process/analyze tools are enabled at the factory level, and operate on the single input file.

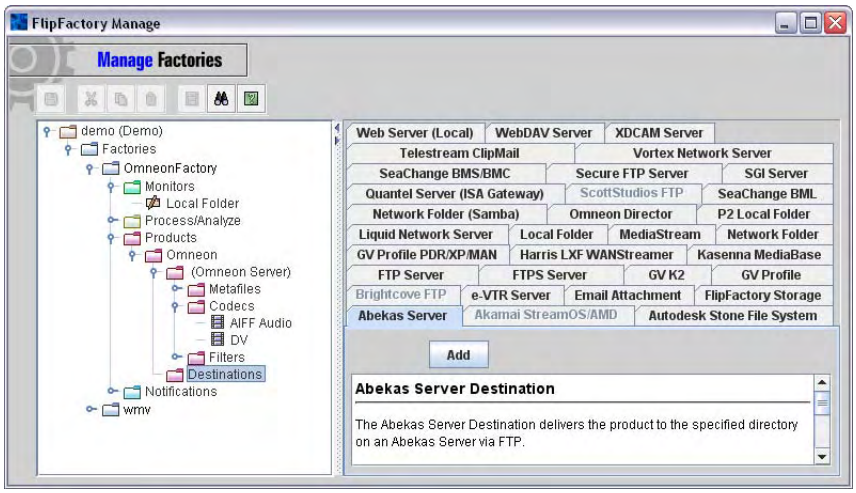
Figure 3–24. FlipFactory filters are for audio and video processing



If you are setting up a direct-convert factory, the only filters that apply are audio filters. If you are transcoding video, you can implement one or more video filters as well. Some filters may not display or be available, depending on your license.

Finally, select the Destinations folder to display the Destinations panel.

Figure 3–25. Adding a Destinations folder

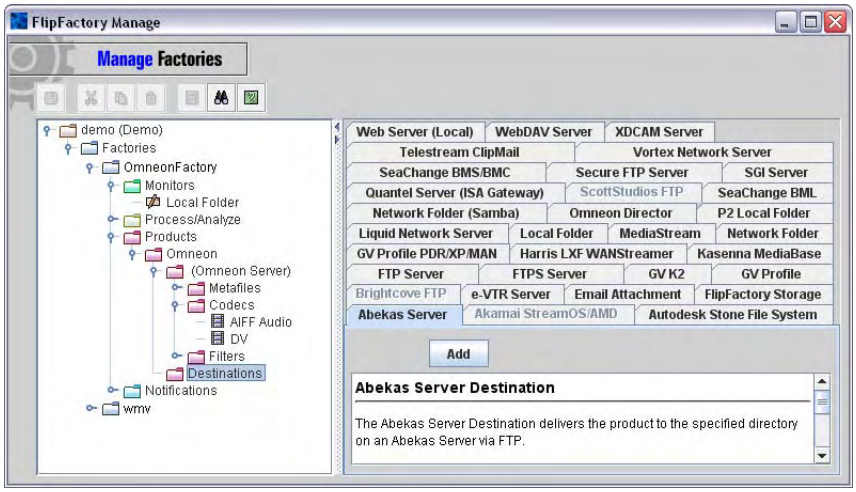


FlipFactory can deliver media to a variety of servers. Note that the list of destinations is for the most part, very similar to the list of monitors.

For this tour, select *Local Folder* and click Add.

Now open the Destinations folder. Select the new Local Folder destination icon to display the editor.

Figure 3–26. Configuring a Destinations folder



Optionally, click Replace existing files so you can run jobs several times and still use the same original file name for the output.

Browse to the *C:\ADestination* folder you created earlier in this tour and select it.

Click Save to update your factory with your new settings, close the Manage Factories window and continue.

Step 6: Submit a Job

In this tour, you're submitting a job by placing a media file in *AMonitor*, the folder being monitored by your new factory.

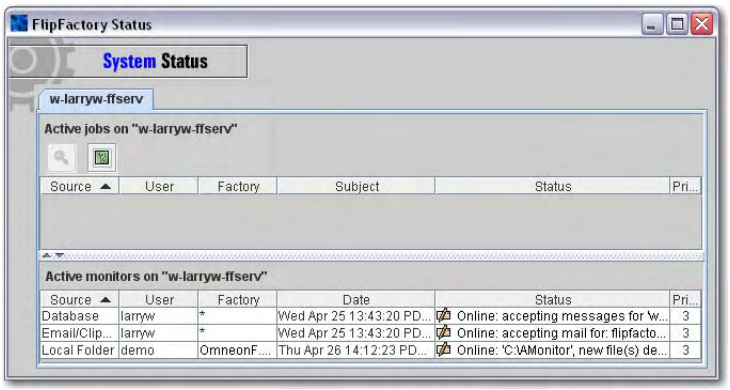
To initiate the job, you'll drag and drop (or copy and paste) a file into the monitored folder (*C:\AMonitor*) – follow these steps:

Open Windows Explorer and navigate to *C:\Program Files\Telestream\FlipFactory\http\Media* and copy the file named *FlipDemo.mss*.

Next, open the monitored folder (*C:\AMonitor*) and paste the file into the folder. By default, monitors check on the status of their target every 60 seconds, so it can take up to 60 seconds for FlipFactory to detect the new file and submit the job.

To view the action in FlipFactory as you submit a job, display the FlipFactory console and open both the System Status (in the Administrators panel) and Job Status windows (in the Users panel) and arrange them so you can see both windows.

Figure 3–27. System Status window

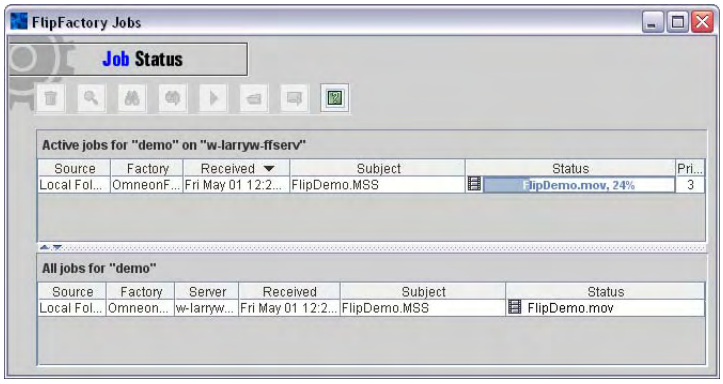


The System Status window provides an overview of active jobs and monitors in a FlipFactory server, or for each server in a load balance group or FactoryArray.

Each FlipFactory server is identified by the tab at the top of the window. FlipFactory displays all of the jobs in progress in the Active Jobs panel at the top of the window, regardless of the account that they were submitted

from. The bottom panel (Active Monitors) displays the active monitors on the same server.

Figure 3–28. Job Status window



In about a minute, the monitor identifies the new media and automatically submits a job for FlipFactory to process.

Watch the System Status window (under the status column for the Local Folder monitor) where you can view the monitor's activities. Status changes as the monitor is initialized, no new files are observed, then a new file is detected (the one you just dropped in *AMonitor*).

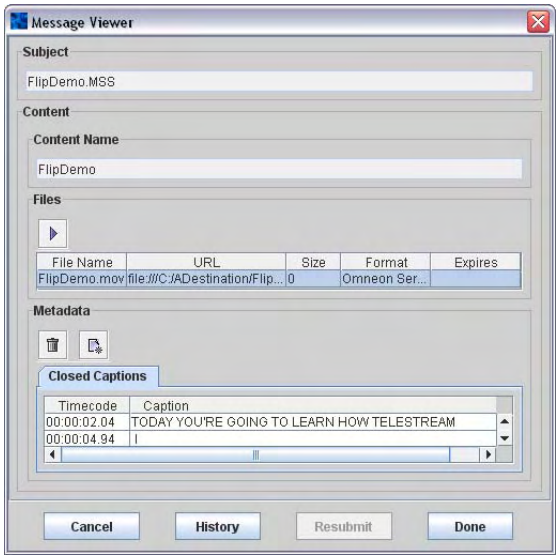
Next, note in the Job status window as FlipFactory processes the job. In the Job Status window, you'll see the different processing stages of the job that was submitted when you copied the file into the monitored folder.

Step 7: View Job Status & Details

When the job completes, the new media file has been created and saved in the destination (*C:\ADestination*), and you can view details about the job.

In the Job Status window, select the job record and click the Open icon (3rd from right on the toolbar) to display the Message Viewer window.

Figure 3–29. Message Viewer window



For more details about each job step, click History. Click Done to close the window.

[TOUR 4] CREATING AN ADVANCED FACTORY

This tour takes about 20 minutes and provides you more hands-on experience – the kind you'll need in production. In this tour, you'll build a factory to transcode a media file into a 2-stream Windows media file and view it.

You'll set up this factory with a monitor. You'll also configure the processing and the codecs to transcode the file properly, and then you'll play the media you just produced.

Step 1. Start the Console & Log On

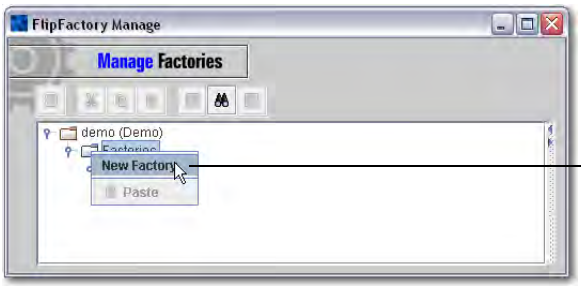
If you closed the console, double-click the FlipFactory shortcut again to display the console.

To begin work, log in to FlipFactory. Because there are no other users and there is no password on the Demo account, just click Login.

Step 2. Create a New Factory

Click Manage Factories to display the Manage Factories window.

Figure 3–30. Creating a factory



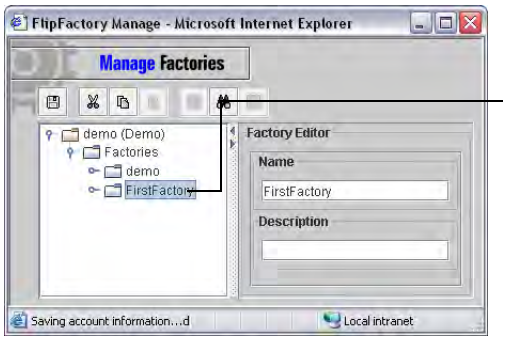
Highlight the Factories folder. Then, right-click the Factories folder and select New Factory to create a new factory in the Demo account.

To create a factory, open the Demo account folder if it isn't already open and select the Factories folder.

With the Factories folder selected, right-click on the Factories folder and select New Factory from the context menu (you can't right-click on folders or objects that aren't highlighted (selected) already). FlipFactory creates a new factory (named *untitled*).

Select the untitled factory to display the factory editor in the right panel.

Figure 3–31. Naming a new factory with the Factory Editor



Click to select the untitled factory. Name and describe the new factory in the factory editor panel.

In the Name field, type *WMFactory.* Optionally, enter a description.

Click the Save icon (disk icon, at top) to update the information and save your work. Notice that when you change information in your account by creating or changing factories, the disk icon becomes active. Its a good idea to get in the habit of saving your work frequently.

Step 3. Set up Monitor and Destination Folders

To set up a FlipFactory monitor, first open the C drive in Windows Explorer and create a folder and name it *AMonitor.* (Of course, you can name monitored folders any legal Windows folder name.)

While you're at it, also create a destination folder so FlipFactory can deliver the transcoded media. Create a new folder on the C drive and name it *ADestination.*

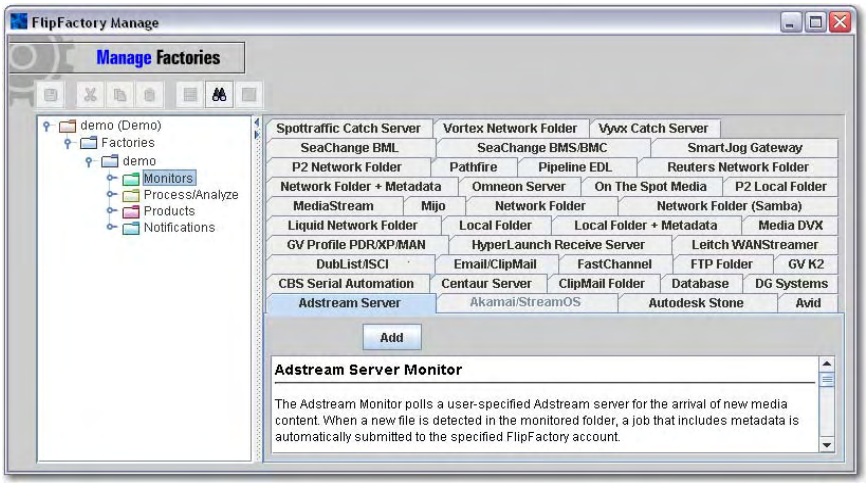
These arbitrary names just make them easy to find – when creating monitor and destination directories you should name them in a practical manner. You can also put a monitor on network servers and other systems on the network.

Step 4. Configure the Monitor

To configure the monitor, return to the Manage Factories window and select the Monitors folder in the FirstFactory to display the Monitors editor. (If the Monitors folder is gray (inactive), you do not have a license

or it is not installed in the proper directory. If a particular monitor tab is disabled, you are not licensed to use it.)

Figure 3–32. Adding monitors to a factory



Click the Local Folder tab and then click Add. You can only add one monitor of each type to a factory. When the Local Folders monitor is added, FlipFactory creates a monitor icon in the Monitors folder (named for the monitor type) and monitors the specified target you configure for new media to transcode.

Click the Local Folder icon to display the Local Folder monitor editor panel.

Browse and locate the folder named *AMonitor* on your C drive and click Select.

Save your work in progress – click the disk icon again. When you save your new monitor, it is automatically started and begins polling the directory.

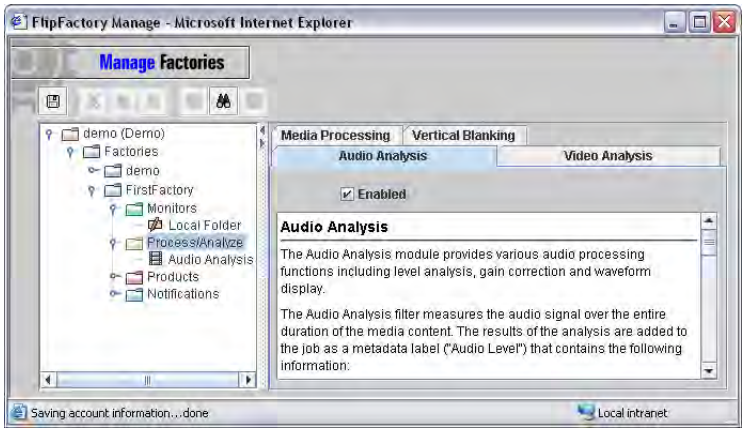
Step 5. Configure Filters in Process/ Analyze

FlipFactory's Process and Analyze tools are a collection of software processes that allow you to trim media, perform basic audio, VBI, and video analysis of your media for further processing, and other tasks.

To set up your new factory's filters in the Process/Analyze folder, follow these steps:

Select the Process/Analyze folder to display the editor (shown with tasks complete).

Figure 3–33. Enabling audio and video analysis processing



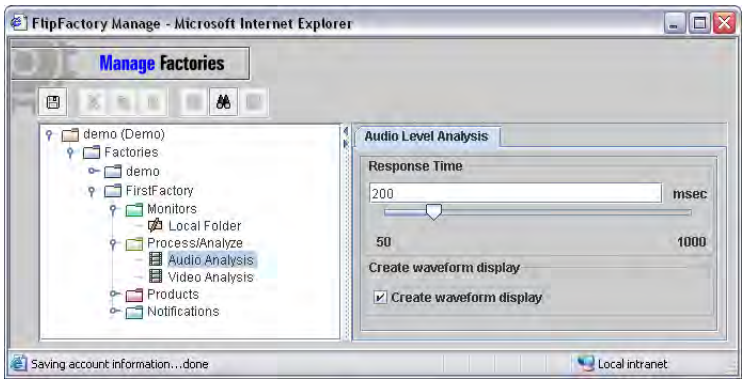
On the Audio Analysis tab, click Enabled.

On the Video Analysis tab, click Enabled to run the Video Analysis tool on all media processed by this factory. When audio or video analysis is enabled, FlipFactory suggests potential changes in audio levels and video settings to improve the clip. You can view these suggestions when the job is complete.

When you enable these two tools, FlipFactory creates icons and displays them in the Process/Analysis folder so you can access each tool's editor to configure their settings.

Next, click the Audio Analysis icon to display the audio analysis editor.

Figure 3–34. Audio analysis editor



Select Create Waveform Display. When the job is complete, you can view a summary audio waveform of the clip. Optionally, adjust the response time.

Next, click the Video Analysis icon to display the video analysis editor.

Click the Keyframe Extraction tab and click Enabled to extract keyframes from your input media. Next, scroll to the bottom of the panel and select Repeat from the dropdown menu under Capture Mode. FlipFactory will create one key frame for every segment (default 5 seconds). You can view the key frames at the completion of the job. (This tool places the key frame JPEGs in the database for review – there is a separate Keyframe codec that allows you to set up and extract JPEG files in a folder for use separately.)

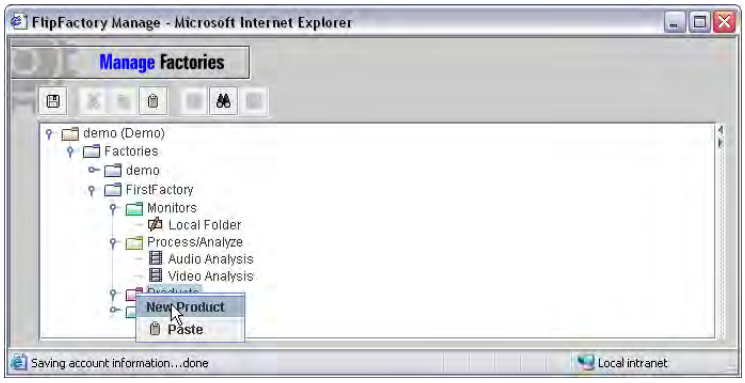
Save your work and continue.

Step 6. Create a Product

To specify the product itself (how the incoming media is to be transcoded and saved as a new media file), follow these steps:

Click the Products folder in your factory to select it.

Figure 3–35. Creating a new product in a factory

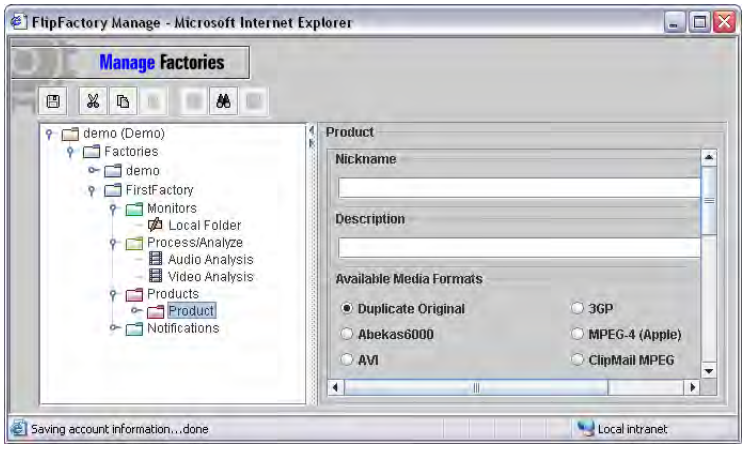


Next, right-click and select New Product from the menu.

Now, open the Products folder to display the new Product folder and select the Product folder to display the Product editor panel (if only Duplicate Original is active, you don't have a license yet or it isn't

installed correctly – see Obtaining and Installing the FlipFactory License (page 2-14).

Figure 3–36. Selecting the media format for your new media



In the Product Name field, type *WindowsMedia* (no spaces are allowed).

Scroll down through the media formats. Locate and select Windows Media Format (at the bottom of the list).

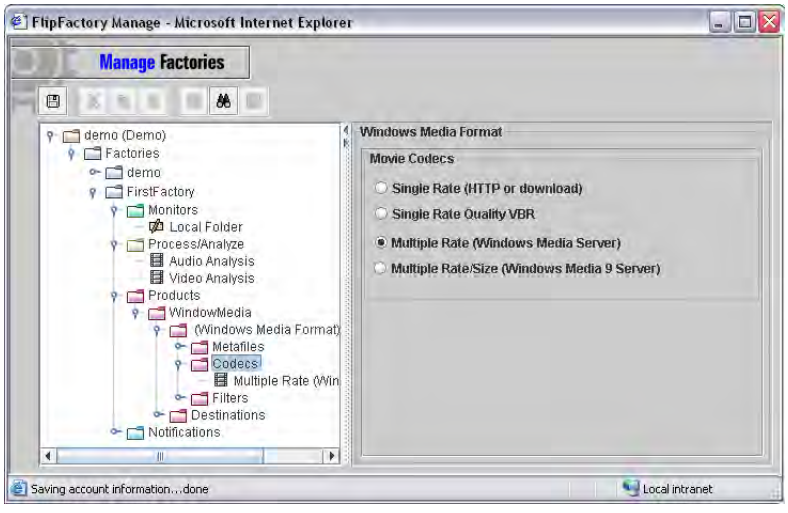
Save the updates to your factory – note the name change of the folder from *Product* to *WindowsMedia*.

Now, open the WindowsMedia folder and open its Format folder to display three folders: Metafiles, Codecs, and Filters.

For this tour, open the Metafiles folder and check out the details in the editor – don't make any changes.

Select the Codecs folder to display the list of codec list editor.

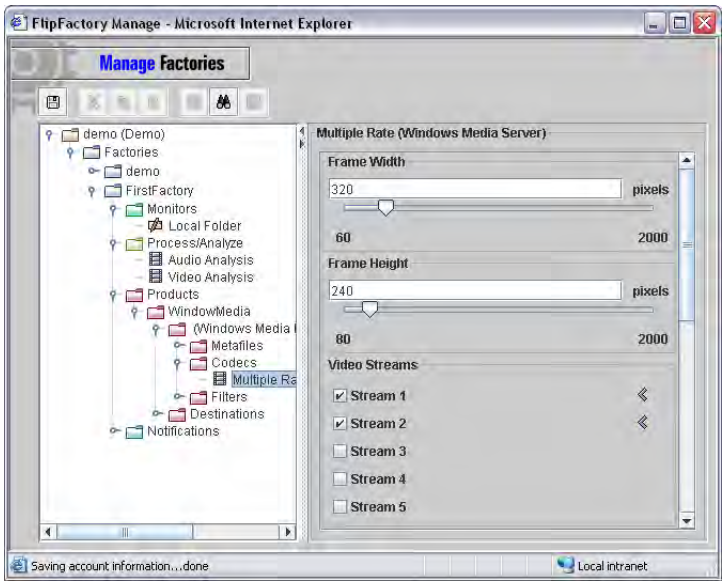
Figure 3–37. Selecting Codecs



Select the Multiple Rate (Windows Media Server) codec.

Next, open the codec and make the following changes in the editor:

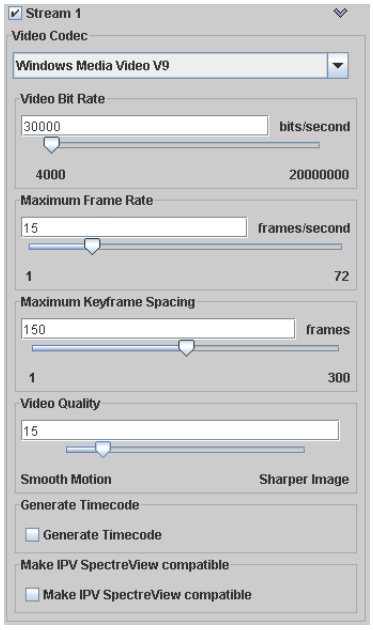
Figure 3–38. Typical codec editor



In Video Streams, uncheck streams 3, 4, and 5 to produce a 2-stream video clip. Scroll down and view other settings as well.

Click the Details arrow to the right of Video Stream 1 to display the settings. Stream 1 is the low-quality stream for this factory:

Figure 3–39. Video Stream settings



First, select Windows Media Video V9 from the dropdown menu.

Bump the Maximum Frame Rate to 15 and reduce Video Quality to 15. (You can use the slider to adjust the value by its allowed increment, or use the left or down arrow keys to reduce the value and the right and up arrow keys to increment the value. You can also just type the new values.)

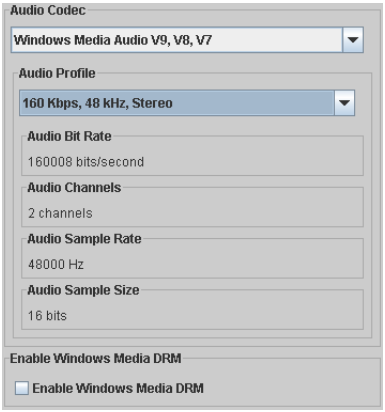
Next, scroll down and locate Video Stream 2, the high-quality stream for this factory. Display the settings and make these changes:

Select Windows Media Video V9 from the dropdown menu.

Set the Video Bit Rate to approximately 50,000 bps and set the maximum frame rate to 30.

Now, scroll down to display the Audio Codec details.

Figure 3–40. Audio codec editor

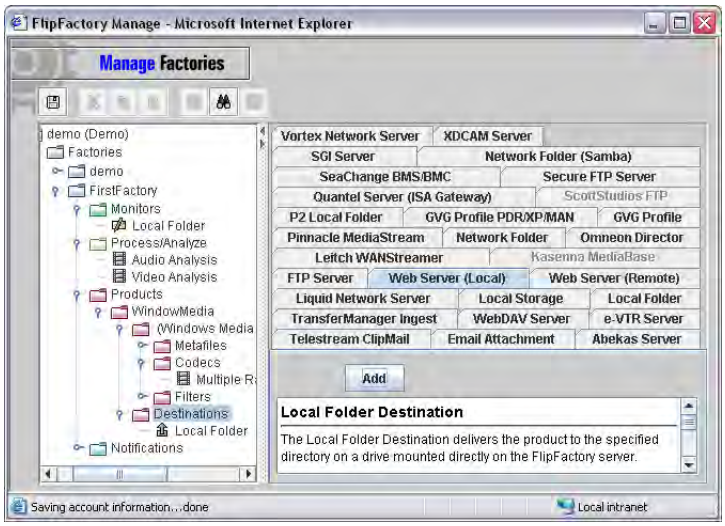


In Audio Profile select 160 Kbps, 48 kHz, Stereo from the menu.

Save your work.

Next, select the Destinations folder to display the Destination List editor.

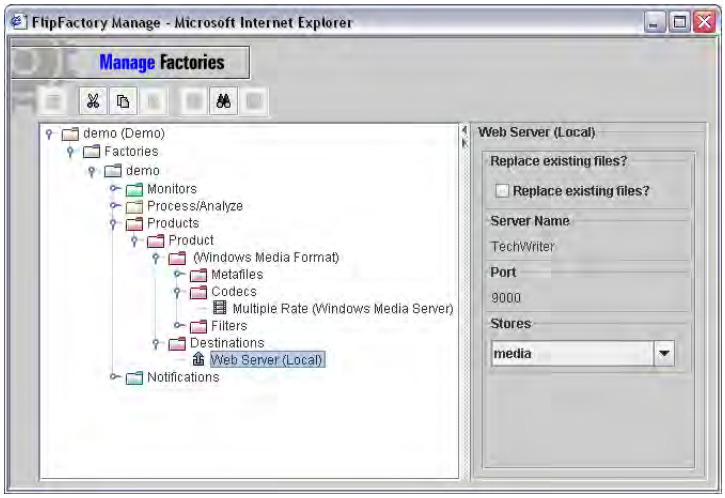
Figure 3–41. Adding a Destinations folder



Click the Web Server (Local Folder) tab and click Add to create a new Web Server (Local) destination. The Web Server (Local) destination automatically creates a URL so that you can play proxy files directly from Message Viewer, Job Status, and Resubmit/Forward windows in FlipFactory by clicking the Play button for the selected file to launch the appropriate media player.

Open the Destinations folder and select the new Web Server (Local) destination icon to display the editor.

Figure 3–42. Selecting a Destinations folder



Optionally, click Replace existing files so you can run jobs several times and still use the same original file name for the output.

The Stores location (where the file is saved) defaults to media, which points to the Program Files/Telestream/FlipFactory/http/Media directory on your C drive if installed with default values.

Click Save to update your factory with your new settings, close the Manage Factories window and continue.

Step 7: Submit Job

In this tour, you're submitting a job by placing a media file in a monitored folder, rather than using the manual method (submitting a job) you learned about in Tour 2.

To view the action in FlipFactory as you submit a job, display the FlipFactory console and open both the System Status (in the

Administrators panel) and Job Status windows (in the Users panel) and arrange them so you can see both windows.

Figure 3–43. System Status window

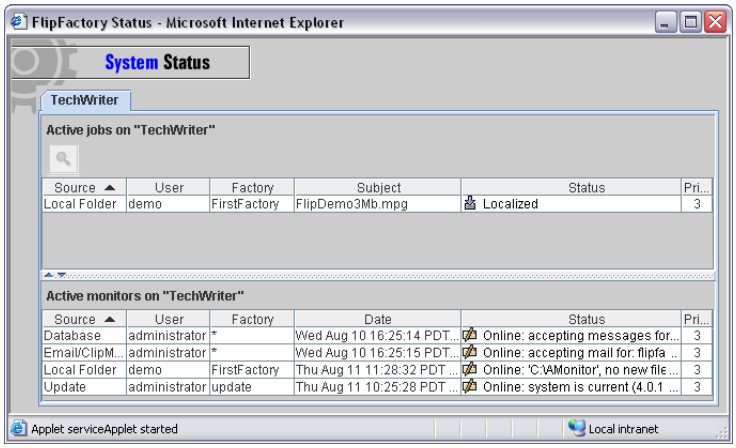
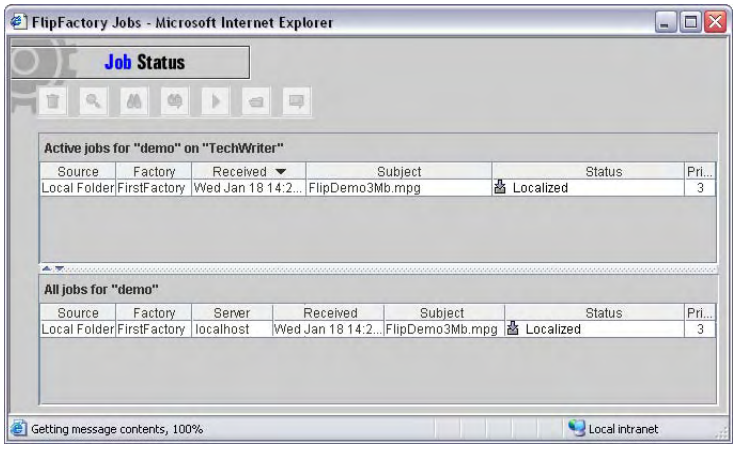


Figure 3–44. Job Status window



To initiate the job, you'll drop an input media file into the monitored folder – follow these steps:

Open Windows Explorer and navigate to *C:\Program Files\Telestream\FlipFactory\http\Media* and copy the file named *FlipDemo.mss*.

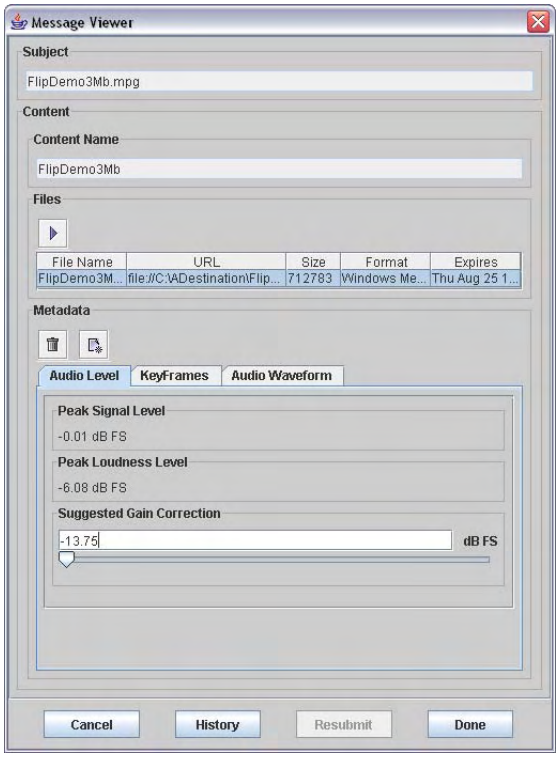
Next, open the monitor folder (*C:\AMonitor*) and paste the file into the folder.

Step 8: View Job Status & Details

The FlipFactory Local Folder monitor polls the local folder every 60 seconds. In a minute or two, the FlipFactory monitor will identify the new media and automatically submit a job for FlipFactory to process. You can view the monitor in System Status, and the job the monitor submitted in the Job Status window. When the job completes you can view details about the new clip.

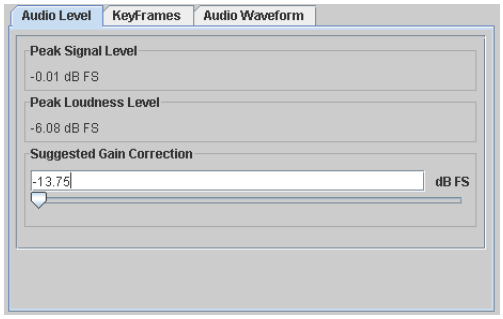
In the Job Status window, select your clip and click the open folder icon to display the Message Viewer.

Figure 3–45. Message Viewer window



Click the Audio Level tab at the bottom of the window.

Figure 3–46. Audio Level tab



You enabled audio analysis, so FlipFactory suggests a gain correction, which you can make and then re-run the job.

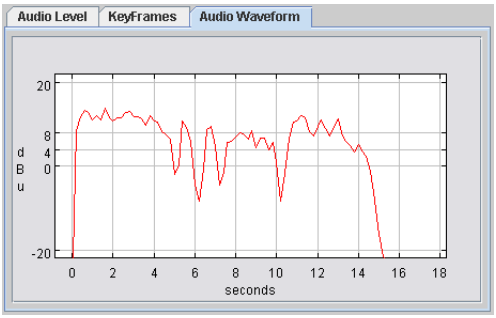
Next, click the Keyframes tab to view the keyframes generated by the Video Analysis tool you enabled and configured.

Figure 3–47. KeyFrames tab

The KeyFrames tab displays the JPEGs produced by the keyframe encoder in the Video Analysis tool. (The Video Analysis process/analyze tool produce key frames for review – a separate Keyframe codec allows you to set up and extract JPEG files in a folder for use separately.)

Click the Audio WaveForm tab to view the audio waveform for this clip.

Figure 3–48. Audio WaveForm tab



FlipFactory displays the Audio WaveForm at the current gain setting.

Step 9: Play Your New Clip

Now, view your clip. In the Message View window, select the clip in the table and click the Play button to play the media in Windows Media Player.

Figure 3–49. Playing transcoded media in Windows Media Player

CHAPTER 4

Using FlipFactory

This chapter provides information about how you use the major features of FlipFactory via the FlipFactory console, either directly or from another computer on the network or Internet.

FlipFactory organizes its features by administrator and user. *Administrators* configure FlipFactory system settings, set up user accounts, and monitor system status. Administrative tasks are displayed as icons in the Administrators panel in the console. FlipFactory customization – configuring it to meet your specific needs – is described in Chapter 7, “Customizing FlipFactory” on page 7–1.

Users perform production work (creating factories, and submitting and monitoring transcoding jobs). To perform these tasks, users click the icons in the Users panel at the base of the console. When you log on as a user, the console displays the features you can use to build and manage factories, and submit and monitor jobs. (These topics are described in detail in following chapters.)

Topics

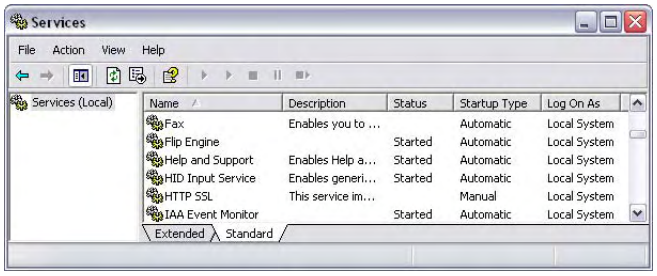
STOPPING AND STARTING FLIPFACTORY

FlipFactory is installed and operates as a service in Windows, and the service itself is usually referred to as the *FlipEngine*. There are several occasions when you may have to stop, start, or restart FlipFactory's FlipEngine. To start, stop, or restart the FlipEngine service, follow these steps:

Click Start > Settings > Control Panel

Open Administrative Tools and open the Services window.

Figure 4–1. Windows Services window



Stopping the FlipEngine

Right-click the Flip Engine service and select Stop from the context menu, or click the stop icon in the toolbar, or right-click and select Properties. In the properties window, click Stop. Wait approximately 30 seconds before re-starting.

Caution

If you want pending/in-process jobs to complete normally, first disable monitors, stop submitting jobs and wait until all jobs are complete before stopping the FlipEngine.

When you stop a FlipEngine (using the Services control panel), all pending/in-process jobs in this FlipEngine are immediately halted, including transcoding tasks.

Unfinished media is unusable, but jobs are marked as complete. Jobs and monitors belonging to the stopped FlipFactory which is part of a FactoryArray are not recovered, because the service was shut down manually.

Starting the FlipEngine

Right-click the service and select Start from the context menu, or select the service and click the start icon in the toolbar, or right-click and select Properties. In the properties window, click Start.

Wait approximately 30 seconds before attempting to open the console.

Starting and Stopping via Command Prompt

Alternatively, select start > run to display the Run window. Type *cmd* and press enter to display the command window.

To stop the FlipEngine, type *net stop "Flip Engine"* and press Enter.

To start the FlipEngine, enter *net start "Flip Engine"* and press Enter.

USING BONJOUR IN FLIPFACTORY

Bonjour is software from Apple, Inc., that enables automatic discovery of devices (such as Pipelines and printers) and services including FlipFactory, by clients on a LAN.

Telestream has implemented Bonjour in FlipFactory and in Pipeline to make discovery and connection easier. Bonjour is required when using FlipFactory with Pipeline.

Note

Bonjour uses multi-cast traffic to publish devices on a network. If you have a large, switched network, your IT department may have to enable multi-cast replication in your switches for Pipelines and FlipEngines to display and connect properly.

Starting Bonjour

Bonjour runs as a service in Windows, and when installed by the FlipFactory installer, the service's Startup Type is set to Manual. To use Bonjour with Pipeline or to easily connect the FlipFactory console to a FlipEngine on the network, you must start Bonjour: Click Start > Control Panel > Administrative Tools > Services > Bonjour > right-click to display Properties – change Startup Type to Automatic and click Apply.

Connecting Consoles to FlipEngines on Your Network

Usually, FlipFactory consoles connect to the FlipEngine locally – that is, on the same computer where the FlipEngine service is running. However, you can also install and connect the FlipFactory console to any FlipEngine on your network, either by knowing the IP address, or by using Bonjour. To use Bonjour, see "Using Bonjour to Display FlipEngines" on page 4–4.

Using Bonjour with Pipeline

FlipFactory requires Bonjour to connect to Pipeline devices. Before using FlipFactory with Pipelines, be sure to start Bonjour by setting its Startup Type to Automatic and starting the service or restarting the server.

After starting Bonjour, open Internet Explorer (or Safari on MacOS) and select View > Explorer Bar > Bonjour to display your Pipelines.

LAUNCHING THE FLIPFACTORY CONSOLE

To configure, manage and use FlipFactory, you access the FlipEngine service via a client application – a Web-start deployed Java application called the FlipFactory console – usually just called the *console*.

Because the console is automatically deployed from the FlipFactory server, you can conveniently access your FlipFactory directly on the FlipFactory server itself, or you can access it from any PC or Macintosh with a LAN or Internet connection.

Note

If you are using a load balance group or FactoryArray, you continue to log on to a specific FlipFactory – which one is immaterial, because all FlipFactories in a load balance group or array use a single, central database.

The modification you make to factories, and the jobs you submit are automatically stored in the central database serving all the FlipFactories in the group/array, and the database is replicated continually if you have redundant FactoryArray servers.

Console Windows and MacOS Platform Requirements

To run the FlipFactory console on a PC or Macintosh, it must have a Java Runtime Environment installed. JRE 5.0 (Java 1.5) or greater is recommended. Java 1.4.2 is also acceptable.

Installing the Console on Local FlipEngine

To install the FlipFactory console directly on the FlipFactory server, double-click the shortcut labeled “Install FlipFactory Console” on your desktop. Or, open a Web browser window and type http://localhost:9000 to display the installer Web page.

Installing the Console on Other Computers

You can install the FlipFactory console on other computers in your network, and access any of the FlipEngines you have installed to manage them over the network.

To install the FlipFactory console on another computer that is not the FlipFactory server, open a Web browser window on the target computer and type *http://<FlipFactoryServer>:9000* where *<FlipFactoryServer>* is the name of the server or its IP address, to display the FlipFactory Console Installer Web page. Run the installer, which installs the console and customizes it to connect via the LAN to the target FlipServer.

Using Bonjour to Display FlipEngines

Alternatively, use Bonjour to display all of your FlipFactories (and Pipelines), and select the one you want to connect to. Launch Internet Explorer (or Safari, in Mac OS X), and select View > Explorer Bar >

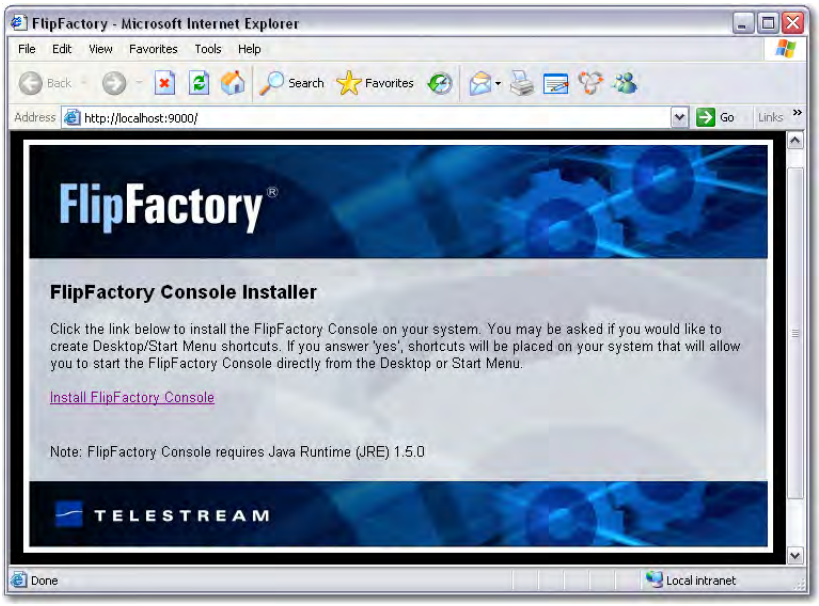
Bonjour. The FlipEngines and Pipelines display in your Bonjour panel. Double-click the FlipFactory you want to install the console from and log on to.

Note

The FlipFactory server and client computer should have their Windows firewall turned off or you may not be able to connect.

Install the Console

Figure 4–2. FlipFactory Console Installer



Click the link on this page to install the required Java files for the FlipFactory Console if necessary, add a shortcut to your desktop named “FlipFactory Console”, and add a program entry in the start menu at Programs > Telestream > FlipFactory > FlipFactory Console.

Note

If you are using – or upgrading from – Java 1.4.2, you must click the link again to update the shortcut, so that you can launch the console.

Launching the Remote Console

To launch the FlipFactory console directly on the FlipFactory server or on another computer to access your FlipFactory, load balance group, or array, double-click the FlipFactory shortcut on the desktop.

Figure 4–3. Shortcut to FlipFactory console

Or, select start > Programs > Telestream > FlipFactory > FlipFactory Console.

Caution

If you plan to connect to FlipFactory via the Internet, you should use a VPN or other secure connection method.

When you have successfully connected to the FlipEngine, FlipFactory displays the console.

Figure 4–4. FlipFactory Console

If the FlipFactory server that you are attempting to connect to is not running, or if the FlipEngine service is stopped or a Windows or other firewall is enabled, an error message displays:

Figure 4–5. FlipFactory Console displays error message

To correct the problem, make sure that the local FlipEngine is started ("Starting the FlipEngine" on page 4–2), turn off all firewalls, and try again.

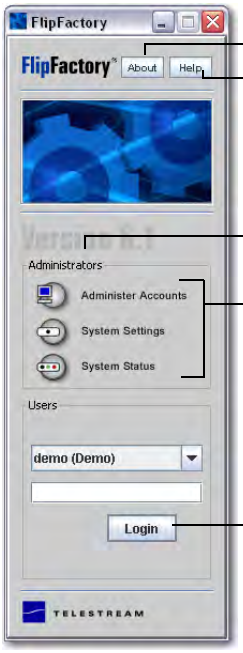
Using Java Runtime Environment

If this is the first time the FlipFactory console has been launched on this computer, the Java Runtime Environment displays this window:

Figure 4–6. Java Security Warning – click Always

Click Always to allow Java to load without displaying the security certificate each time. FlipFactory displays the console.

Figure 4–7. FlipFactory Console is for administrators and users



Click About to display complete details about this Flip Server and all licensed components.

Click Help to display and use an online version of this User's Guide in PDF format.

Use Administrator commands to manage accounts, customize FlipFactory, and monitor system status.

Click Administer Accounts to create and manage user accounts.
Click System Status to display the current jobs for all users on this factory or group.
Click System Settings to modify system settings.

Users log in to build and manage factories, and perform production work by submitting jobs and viewing job status for their account.

You can view details about FlipFactory and your license by clicking About at the top of the window. To view the User's Guide (in PDF format) with Adobe Acrobat, click Help. All administrator commands are displayed as icons in the Administrators panel (administrator security is provided by providing network credentials); users commands are in the Users panel.

Users are required to log on to an account with a username and optional password before they may use FlipFactory. When a user logs in, the login panel is replaced by this Users panel:

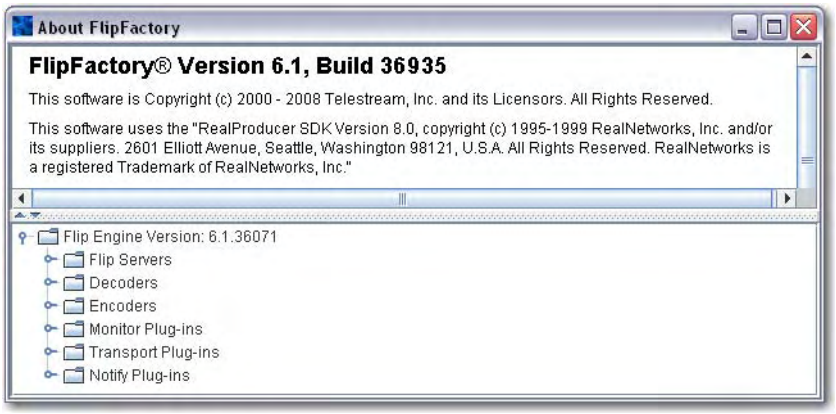
Figure 4–8. FlipFactory Console users panel

Click Manage Factories to create & configure factories.
Click Submit Jobs to send media to a factory for processing.
Click Job Status to display all jobs and details.

DISPLAYING COMPONENT VERSIONS AND CAPABILITIES

To identify the FlipFactory version and details about the components enabled by your license, click About in the upper right-hand corner of the FlipFactory console. FlipFactory displays the About FlipFactory window.

Figure 4–9. FlipFactory About window

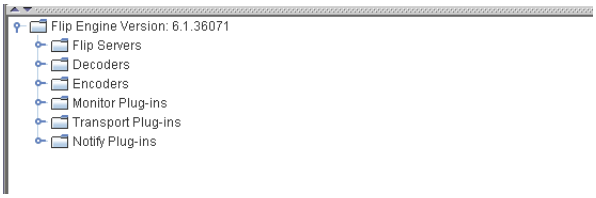


At the top is the version and build number, plus software component credits and a link to the End User License Agreement.

Displaying FlipFactory Components

In the bottom panel, FlipFactory displays a detailed list of its servers, decoders, encoders, monitor, transport, and notify plug-ins.

Figure 4–10. Servers, decoders and encoders, and plug-ins



Open each object in the list to display each of the components in the group: build number and license status.

FLIPFACTORY ADMINISTRATIVE TASKS

You use the icons in the Administrators panel of the FlipFactory Console to perform administrative tasks:

Caution

If you close any windows in the FlipFactory console (Manage Factories, or Administer Accounts, for example) without saving your changes, Safari does not warn you that you will lose your changes. Always click the disk icon to save changes before closing the windows or you'll lose the changes you've made.

- Administering User Accounts (following)
- Configuring System Settings (page 4-15)
- Viewing System Status – Jobs and Monitors (page 4-20)

Logging on as Administrator

The first time you click on any administrator task icon after you launch the console, you must log on. The console displays the following window:

Figure 4–11. Administrator log on window

The default administrator user name is administrator, and no password is assigned.

Enter your user name and password and click OK to log on.

Note

To modify the user name and password, see Changing the Administrator's Password on see Changing the Administrator's Parameters on page 7-26.

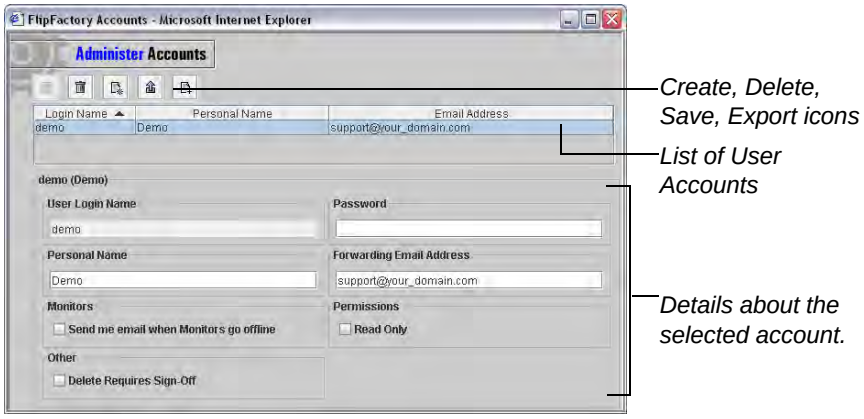
ADMINISTERING USER ACCOUNTS

Users submit jobs to FlipFactory via an account. You must have at least one account for users to log on and submit jobs. You may create multiple accounts to organize how end users utilize FlipFactory—for individuals, departments, jobs, projects, etc. FlipFactory allows you to tailor an account for specific functionality, such as read-only permission, or sign-off permission for deleting media, for example.

Accounts also provide privacy and authentication. Users must log on to create or manage factories and submit or monitor jobs. Each user only sees the factories built under their user ID, and jobs submitted under their user ID.

When you click Administer Accounts, FlipFactory displays the Administer Accounts window.Click on a specific account to display the details for the selected account directly below the accounts table:

Figure 4–12. Use Administer Accounts to create user accounts



The Administer Accounts window displays a table of all accounts in this FlipFactory, and properties for the selected account. The Create, Delete, Export and Save icons are in a toolbar at the top of the window. To sort any column in the list, click on the column title – you can sort in ascending or descending order. The arrow indicates the sorted column and its order.

Note

FlipFactory provides a default Demo account for use in the tours in Chapter 3, Guided Tours.

Creating a New Account

To create a new account, click the New Account icon (the icon on the far right of the tool bar, at the top of the Administer Accounts window). FlipFactory displays the Create a User Account window.

Figure 4–13. Create User Account window

Complete these fields:

User Login Name: The name that appears in the accounts list popup menu. Enter up to 32 letters and numbers; spaces and other special characters are not allowed.

Personal Name: Used in notification emails as the Users name.

Password: Used to log in from the console. Password is optional, but recommended when you create more than one user for security.

Forwarding Email Address: Used when sending email notification of started and/or completed jobs. Enter the email address of the person that should be listed as the from email address for this account.

Click Save to create the account, or click Cancel to close the window. Once you create an account, you can select it to display account details and update them as required.

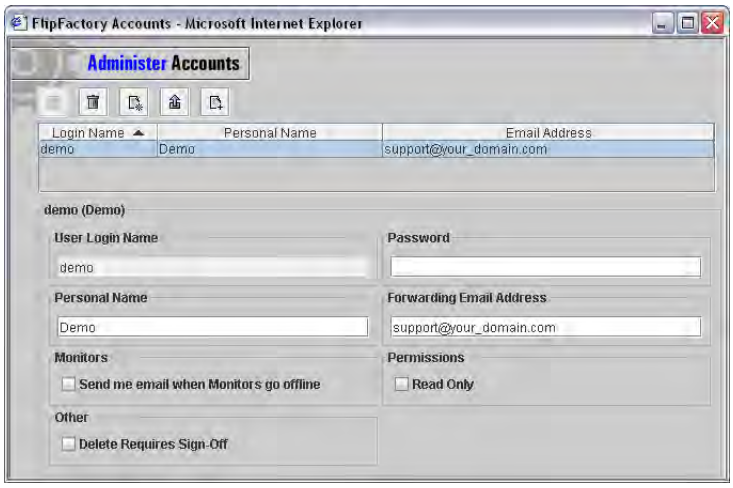
You must close the Administer Accounts window to update the console's user dropdown menu and you can log on to the new account.

Updating User Accounts

As administrator, you can make changes to any user account. Users can also make changes to certain properties – login name, password, personal name, forwarding email address, and email Monitor notification. Users can update these fields directly in the Manage Factories window when the account icon is selected (the top icon, named with the account name).

Select the account in the list to display account details and update them.

Figure 4–14. User account details



Monitors: Check Send me email when monitors go offline, when you want FlipFactory to alert you by sending an email to the address specified in Forwarding Email Address each time a monitor goes offline or becomes disconnected.

Permissions: Check Read Only to prevent the user from creating or deleting factories in this account, or making changes to existing factories. You may use this to lock an account for production use after you have set up the factories exactly the way you want them.

When Read Only is checked, the user can use the factories, but he is not allowed to make changes without your knowledge.

Other: Check Delete Requires Sign-Off to display an Approve/Reject window when the user attempts to delete a completed job. This feature is used primarily for TrafficManager installations.

When a user account has Delete Requires Sign-Off checked, the delete icon in the Job Status toolbar changes to a check-off symbol. When the user selects a job and clicks the delete icon, FlipFactory displays the following dialog.

Also, if you attempt to delete an account that you are signed in to (using), you must sign out of the account before deleting it.

Figure 4–15. Approve/Reject window

The user supplies the name granting authority or rejecting the request and clicks OK to continue. FlipFactory generates an email to the Administrator, containing job details and notification of approval or rejection as an audit.

Modify the details (except for the account name, which may not be modified), and click the Save icon (disk image – left icon in toolbar) to save the new account information.

Exporting an Account

To export an account, (exporting an account copies all factories and all settings in them to an XML file for storage or transfer to another FlipFactory database or to Telestream for customer service) select the account to export.

Next, click the Export icon to display the Export Account dialog. Select a destination (default directory: <FlipFactoryInstallDrive>/My Documents) for the account's XML file (and optionally rename it), then click Export.

When the XML file has been saved, you can import it into another FlipFactory database ("Importing Accounts" on page 10–9), save it for later use, or send it to Telestream for support, for example.

For more details on exporting and importing accounts to create a centralized database of accounts and factories for a load balance group or FactoryArray, see Importing and Exporting User Accounts and Factories (page 10-6).

Deleting an Account

To permanently remove an account, select the account name in the account list. Click on the Delete icon. Click OK in the confirm dialog to erase the account, including all factories that exist in this account.

Caution

When you delete an account, it is a permanent operation. FlipFactory removes every factory created by this account from the database. Be certain that you understand the consequences of your action before proceeding. You cannot delete an account when a job is executing, or a monitor in any account factory is active.

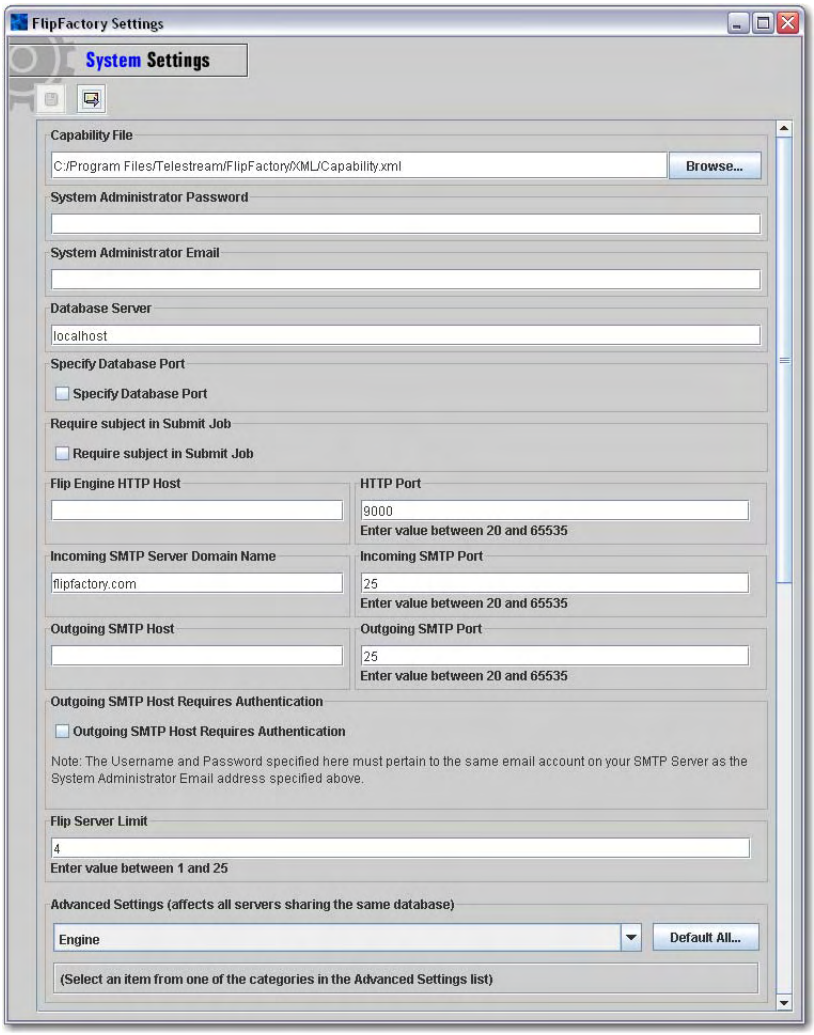
CONFIGURING SYSTEM SETTINGS

To configure FlipFactory's system settings for your environment, click the System Settings button on the FlipFactory console to display the System Settings window:

Caution

If you close windows in the FlipFactory console (including Manage Factories, or Administer Accounts) without saving your changes, you will lose your changes. Always click the disk icon to save changes before closing console windows.

Figure 4–16. System Settings window



Two icons are displayed in the toolbar at the top of the window:

Save – Click to update the registry entries before closing the window. This icon is active when changes have been made.

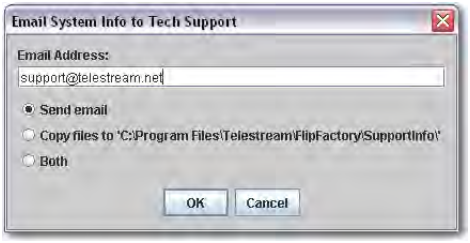
Email Settings – Click to email system information to Telestream Technical Support.

Sending Email to Tech Support

To send an email with FlipFactory settings to Telestream Tech Support for assistance, click the Email Settings button in the toolbar.

When you click the button, FlipFactory displays this window:

Figure 4–17. System Settings window



Check the options for sending the email, and also for copying the files listed below to a SupportInfo folder at *C:\Program Files\Telestream\FlipFactory.*

Note

In a FactoryArray, engine logs from all FlipEngines in the array are copied to the SupportInfo folder (in subdirectories named after the host) on the system executing the command.

Make your selections and click OK to collect the system information per your choices, and send the email to the address you specified. The following files and information are sent to the address:

- Your computer system information (Windows sysinfo.nfo file)
- FlipFactory tree path registry settings
- FlipFactory license file
- FlipFactory Capability XML file
- factory XML files
- account XML files
- advanced settings file
- FlipFactory engine logs, stdout logs, and stderr logs.

System Settings

Make changes and re-start the FlipEngine for changes to take effect.

Table 4–1. System Settings Fields and Descriptions

Component	Description
Capability File	Identifies location of capabilities file, primarily used to identify this Flip Engine's capabilities, and store metadata labels. This file is written each time the FlipEngine starts. ClipMail Pro users can click the FlipFactory Metadata button to retrieve the set of metadata labels for this Flip Engine. Then, they can fill the metadata labels out before sending a job to the FlipFactory, guaranteeing proper interoperability.
System Administrator Password	By default, there is no administrator password. To set a password, enter it in this field, then close the console. FlipFactory encrypts the password and saves it in the registry. When an administrator password is in effect, the first time each session you click an administrative function, you must enter the username (default: administrator, changeable in registry (see Changing the Administrator's Parameters on page 7-26)) and password. To reset the password outside of the console, you must delete it from the registry.
System Administrator Email	The email address of the person who should be notified when FlipFactory needs to send emails to notify of impending license expirations, etc.
Database Server	When located on same server as the target FlipEngine, identified as `localhost`. When located on a separate network server, specified by the workgroup or host name, or IP address. When this FlipEngine is part of a FlipFactory group or a FactoryArray, enter the host name or IP address of the server where the group database is located or enter the virtual IP address assigned to the FactoryArray Database Mirroring service, if utilized. You must obtain an IP address (to use as a Virtual IP Address) from your system or network administrator. Enter the Virtual IP address in the Database Server field when installing and implementing the FactoryArray Database Mirroring service.
Specify Database Port	Check Specify Database Port to display the port field. Check and modify the port *only* when you did not name the instance FLIPINSTANCE.
Require Subject in Submit Job	Check this option when you require all manually submitted jobs to have a string in the Subject line (Submitting a Job Manually (page 6-3)).
FlipEngine HTTP Host	Fully-qualified URL of FlipEngine when accessed via HTTP.
HTTP Port	Port address of the FlipEngine database when accessed via HTTP.

Table 4–1. System Settings Fields and Descriptions

Component	Description
Incoming SMTP Server Domain Name	Provides SMTP service for incoming emails, such as the Email/ClipMail monitor. Enter the domain or host name where the SMTP email server is running.
Incoming SMTP Port	TCP/IP port listening for connections to the incoming SMTP server.
SMTP Server	Provides authenticated SMTP service for outgoing emails, such as notifications. Enter the domain or host name where the SMTP email server is running. Used when the SMTP server is not local to this domain, and is used to bounce messages to a different network.
SMTP Port	TCP/IP port listening for connections to the SMTP server.
Outgoing SMTP Host Requires Authentication	Check when your outgoing SMTP server requires authentication before sending. Displays Username and Password fields for entry.
Username	Enter the authorized username for the System Administrator Email specified above.
Password	Enter the authorized password for the System Administrator Email specified above.
Flip Server Limit	Maximum simultaneous transcodes (task slots) allowed per Flip Engine server. The default is 4. For each step in a job, a queue and process go together. The localize queue places one job at a time into the localize process, up to the maximum of the limit at any one time in the process. Once a job finishes localizing it is passed into the transcode queue and the next job in the localize queue drops into the localize process. Every stage: localize, transcode, delivery works in the same way. For example if the limit is 4, a job that produces 5 products (simultaneous encodes) will start and perform 4 encodes, then start and perform 1 encode when the first encode completes. Usually, you set the server limit at one to three slots per processor. Thus, on a 4-processor server you can set the limit up to 12 slots. Telestream recommends setting the Flip Server limit to match the number of processors on the server, then experimenting with performance. If you set the limit too high, you may cause inefficiencies by adding unnecessary context-swapping overhead. A higher number may be appropriate for many small jobs; a lower number is suggested when you have fewer, larger jobs (involving input clips that are a few minutes in duration or longer). See Advanced Settings (Advanced System Settings (page 7-2) and Tuning Queues|Limits|Flip Limit for High Volume Systems (page 7-6) for more details. **Note**: You must restart the FlipEngine service for Flip Server Limit changes to take effect.

Table 4–1. System Settings Fields and Descriptions

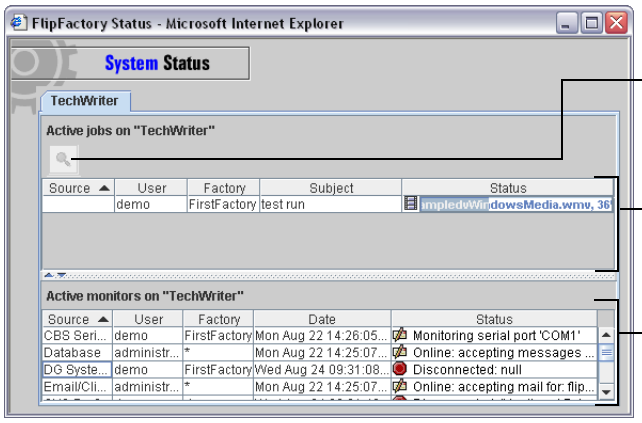
Component	Description
Advanced Settings	Frequently used customization settings, accessible from the user interface instead of registry settings. See Advanced System Settings (page 7-2)

When you have updated the system settings, click Save to update the settings in the registry.

VIEWING SYSTEM STATUS – JOBS AND MONITORS

To view the status of a FlipFactory system, click System Status. FlipFactory displays the System Status window.

Figure 4–18. System Status window displays jobs and monitors



Click to display all messages for the selected job.

FlipFactory displays details about each job it is processing in the Jobs table.

View Monitor status in this table.

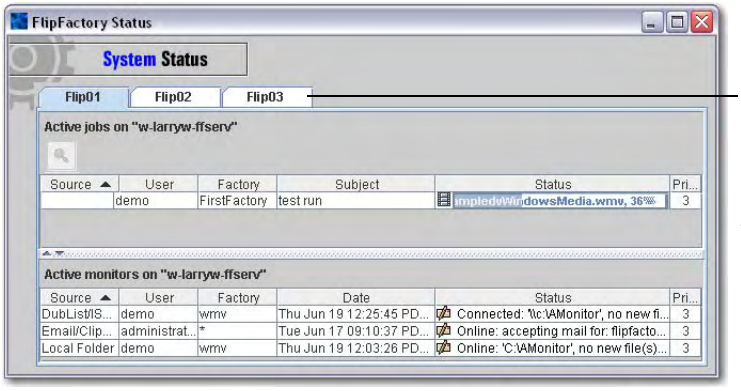
Each FlipFactory server in a group or FactoryArray is identified by the tab at the top of the window. FlipFactory displays the jobs in progress in the Active Jobs panel at the top of the window. The bottom panel (Active Monitors) displays the monitors.

To sort any column in these tables, click on the column title – you can sort in ascending or descending order. The arrow indicates the sorted column and its order.

Load Balance Groups & FactoryArrays

If your FlipFactory server is part of a load balance group or FactoryArray, each FlipFactory server in the group or array is displayed in a tab.

Figure 4–19. System Status window displays jobs and monitors



Click a FlipFactory server to view active jobs and monitors for the selected server.

FlipFactory displays the jobs in progress in the Active Jobs panel at the top. The bottom panel (Active Monitors) displays the monitors.

Viewing Job Status

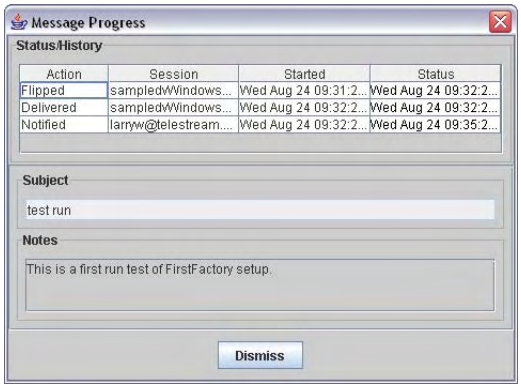
If more jobs are displayed than may be shown, adjust the vertical slider to display more of the Jobs panel, or scroll through the jobs.

Table 4–2. System Status Fields

Field	Description
Source	Fully-qualified name of store or directory being monitored. Not used for manually submitted jobs.
User	Name of account that owns the factory processing this job.
Factory	Name of factory processing this job.
Subject	Value from Subject line in Submit Job record. Not used for jobs from monitored locations.
Status	Terms describing tasks executed during job processing: **Uploading** – FlipFactory is localizing the media to the FlipFactory local storage prior to flipping. **Flipping** – FlipFactory has localized the file and is transcoding the media. FlipFactory identifies the clip, and the percent of completion. **Delivering** – FlipFactory is delivering output media to a destination. **Notifying** – FlipFactory is processing the notification tasks for this job. **Complete** – All tasks in this job are complete, output media has been delivered, and notification (if any) has taken place. **Retry** – A process fails and a retry effort is in progress. **Disconnected** – The monitor is unable to connect to server to monitor the target folder. This may occur for several reasons, including: the network or larger server has failed, an incorrect value or setting is preventing connection, and others.
Priority	Job priority assigned when submitting this job manually, or Job Priority in monitor where this job was submitted.

To view details about each task in a job, select the job and click the magnify icon – the only icon in the toolbar. FlipFactory displays the tasks for this job in the Message Progress window.

Figure 4–20. Message Progress window



Each action in the job is displayed in the dialog box. FlipFactory displays details about each task: each action (in progress or complete), session information, and the time stamp for the start and end of each task.

Viewing Monitor Status

The Monitors table displays the status of each monitor in the FlipFactory.

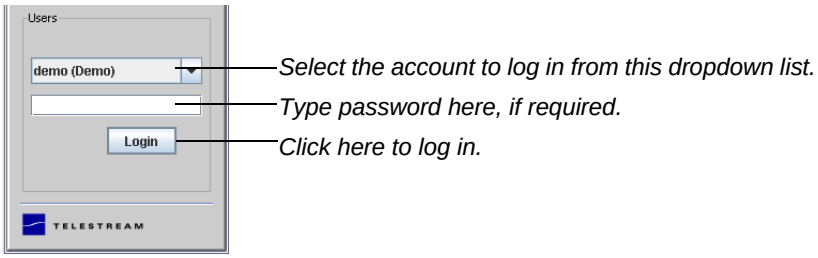
Table 4–3. Monitor Status Fields

Field	Description
Source	Fully-qualified name of store or directory being monitored.
User	Name of account that owns the factory this monitor is located in.
Factory	Name of factory where this monitor is located.
Date	Date and time of currently displayed status message.
Status	Current status of this monitor.

LOGGING ON TO A USER ACCOUNT

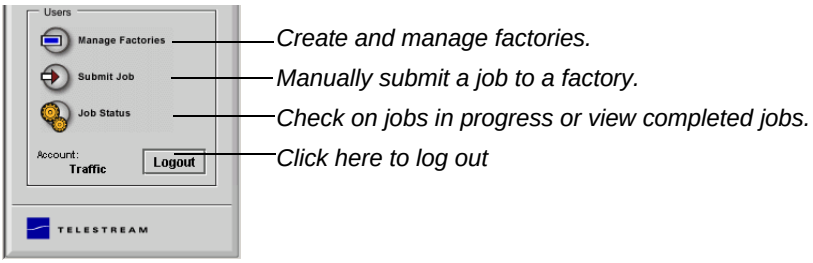
To log on, select the account from the account drop down list. Enter the password (if required) and click Login.

Figure 4–21. Log in to a user account in the Users Panel



When you log in, FlipFactory displays the tasks you can perform.

Figure 4–22. Icons are located in the Users Panel



When you enter an account choose the following tasks:

Option 1 Managing Factories (following)

Option 2 Modifying User Account Information (page 4-25)

Option 3 Monitoring Job Status (page 4-28).

MANAGING FACTORIES

Click the Manage Factories icon to display the Manage Factories window. Each time you open the Manage Factories window, FlipFactory obtains information from the database about each factory in your account and displays it. You use this window to build and manage your factories.

Caution

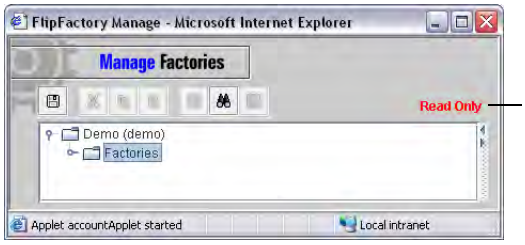
If you close any windows in the FlipFactory console (Manage Factories, or Administer Accounts, for example) without saving your changes, Safari does not warn you that you will lose your changes. Always click the disk icon to save changes before closing the windows or you'll lose the changes you've made.

As a FlipFactory user, this is where you'll conduct most of your activities. See Chapter 5, "Building Factories" on page 5–1 for complete details.

Figure 4–23. Manage Factories window

If your account is a production account, and has been set up as read-only by the administrator, you may make changes, but you cannot save them. FlipFactory displays the read-only warning in the window.

Figure 4–24. Factories can't be modified in Read-Only accounts



The Manage Factories window is used to create view, and manage each of your factories. When you create a new factory, or make changes, the disk

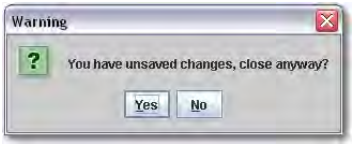
icon in the toolbar highlights, indicating you have unsaved changes. Click it to save the changes to your account in the FlipFactory database.

Note

You must disable all monitors and save your changes before you can delete or rename a factory.

If you attempt to close the window with unsaved changes, the console displays this warning message:

Figure 4–25. Console Save Changes dialog



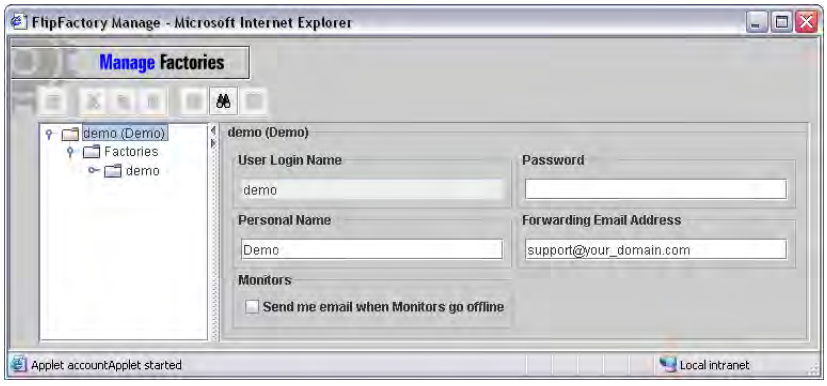
Caution

When you close a console window with the close icon in the title bar, the console displays a warning dialog if you have unsaved changes. If you click OK to close the window without saving changes, you will permanently lose any changes you made since the last time you saved changes. To save your changes, first click Cancel. Then click the Save icon before closing the Manage Factories window.

Modifying User Account Information

To view or change your account information, click the top level icon (this icon displays your account's login name and personal name).

Figure 4–26. User account details in Manage Factories panel



User Login Name: The name that appears in the accounts list popup menu. Enter up to 32 letters and numbers; spaces and other special characters are not allowed.

Personal Name: Used in notification emails as the User's name.

Password: Used to log in from the console. Password is optional, but recommended when you create more than one user for security.

Forwarding Email Address: Used when sending notification of completed jobs. Enter the email address of the person (or group) that should receive emails from this account.

Monitors: Check Send me email when monitors go offline to cause FlipFactory to send an email to the address specified in Forwarding Email Address each time a monitor goes offline or becomes disconnected.

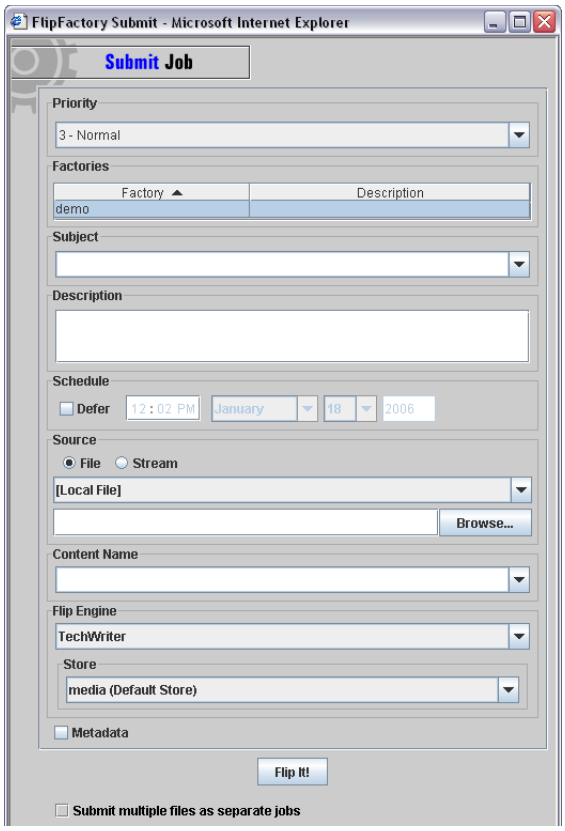
Click Save to save changes to the account.

MANUALLY SUBMITTING JOBS

In addition to monitoring target servers and directories for incoming media and automatically submitting jobs when media is written to the directory, you can also manually submit media to a factory.

Click Submit Job in the User's Panel of the main console to display the Submit Job window.

Figure 4–27. Use Job window to send media to a factory

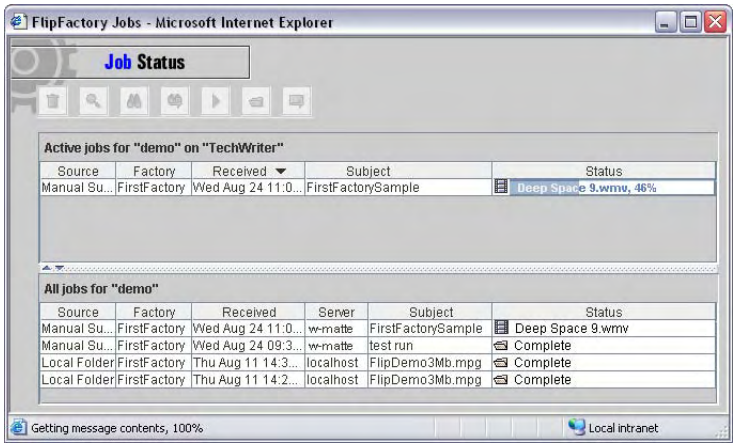


You use this window to manually select an input media file, set it up for processing and submit it to a factory. For complete details about submitting jobs, see Submitting & Working with Jobs (page 6-1).

MONITORING JOB STATUS

Click Job Status to display the Job Status window.

Figure 4–28. Job Status window – completed & in-progress jobs



You use this window to check on jobs in progress and view jobs that are complete. For details about monitoring jobs, see Chapter 6, Submitting & Working with Jobs (page 6-1).

CHAPTER 5

Building Factories

This chapter describes generally how to build and manage factories – the workhorses of FlipFactory. You build each factory to transcode and deliver media based on your workflow and production requirements.

In this chapter, you'll learn how to create and delete factories, and customize the four building blocks specifically for your media-processing requirements. You'll also learn how to create and set up monitors, processes, filters, media formats and codecs, and delivery methods.

Topics

Note

The unique details of setting up and configuring specific monitors, process and analysis tools, codecs, filters, and deliveries and notification is provided in the online help pages for each specific entity you're using.

THE FOUR BUILDING BLOCKS OF A FACTORY

Each factory you create contains four building blocks (displayed as folders in the factory panel). These building blocks represent the tasks FlipFactory completes as it accepts a job and executes it.

The building blocks of each factory are:

Monitors Monitors are FlipFactory processes you configure, that identify new media in specific locations and automatically submit jobs to a factory when the media has arrived. FlipFactory monitors include databases, local and network folders, FTP folders, email, ClipMails and catch/edge servers including DG Systems, Vyvx, and others.

Each factory can have one or more monitors, or it may not have any – it may be configured for manual job submission only.

Process/Analyze Tools FlipFactory provides analysis tools including key frame extraction, GraphicsFactory templates, audio and video levels, media processing, audio and video watermarking, metadata processing tools, and vertical blanking, among others.

You can add and configure as many process/analyze tools as necessary in each factory.

Products Each factory can have one or more products that it produces. Each Product includes a specification for an output format, including encoders for producing mobile, SD and HD media in all major media formats, movie, audio/video codecs, metadata, plus GraphicsFactory, and a wide variety of pre-processing filters you can employ. You also specify destinations for delivery of media, when it completes transcoding.

Notifications Notifications activate certain processes after the completion of a job. Notifications are unique to each destination, and include forwarding, email (via authenticated SMTP, set up in System Settings), Redirector, VideoLogger, and others. Factories can have one or more notifications, or none.

These building blocks are a permanent part of each factory to provide a method for you to specify exactly what happens to each job submitted to this factory.

In some cases, there may not be a task to perform in one of these steps. For example, you may set up a factory to process jobs without notifying anyone of job completion. In this case, the Notifications folder is empty, but you can’t delete the folder itself – it is a permanent part of each factory you create.

FlipFactory Uses Stores to Control Media

FlipFactory uses stores to provide an abstract, flexible reference to disk storage space. Stores make it easy to logically organize media by task or workflow, and control when FlipFactory deletes old media files, when they are no longer needed.

Because stores play an important, central role in job processing, its important to have a high level understanding of how they are used, and you create, configure and use them in your factories.

All monitors except the Local Folder monitor *localize* media (copy the file) into a store (usually pointing to a specific directory on a local drive (using drive-letter syntax) to improve transcoding performance. Stores are also used by some destinations. Some destinations also use stores.

Each time FlipFactory localizes a file for transcoding, it creates a unique subdirectory in the selected store, to avoid duplicate file names in the same directory. The subdirectory is named with the root file name plus a date-time stamp. When the file is deleted, the subdirectory is also deleted.

By default, FlipFactory defines a Media store and the associated directory is *C:\Program Files\Telestream\FlipFactory\HTTP/Media*. In many cases, FlipFactory users never change the associated directory or add any other custom stores to their system. However, as you add more workflows, increase production volume, or implement a load balance group or FactoryArray, you'll probably add more stores, or modify the settings of the media store.

Stores are defined using the Windows Registry. Three keys are involved:

- The store key identifies the store entity itself
- The volumes key identifies the physical drive, volume, or path where the media files are written and read
- The drives key provides authentication.
- Full details about creating and configuring stores is provided in "Adding Custom Stores" on page 7–18.

Stores in FactoryArray or Load Balance Groups

When you implement a FactoryArray or load balance group, it is important to externalize stores to eliminate a point of failure in the system. If a FlipFactory in a FactoryArray or load balance group fails, local stores may become unavailable, causing monitors to become inoperable or job recovery to fail. For example, a FlipFactory server OS may crash, or a network connection may fail. Thus, the store on a local drive is now unavailable.

For restrictions on configuration of stores in FactoryArray or load balance groups, see the FactoryArray User's Guide.

USING THE MANAGE FACTORIES WINDOW

FlipFactory provides the Manage Factories window to create, set up and delete factories in an account. To display the Manage Factories window, log on and click Manage Factories in the Users panel of the console.

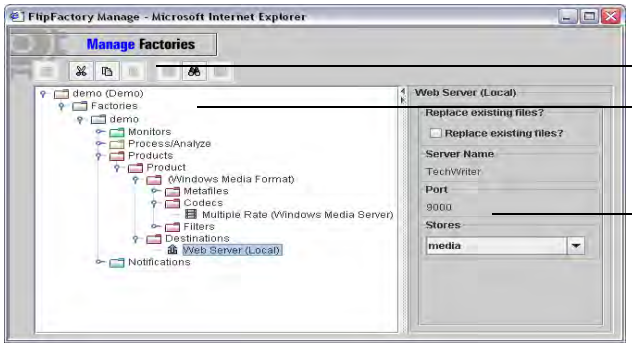
Figure 5–1. Click Manage Factories icon to manage factories

After logging on to your account, click here to display the Manage Factories window, where you manage your factories.

When you're done submitting and monitoring jobs or setting up your factories, be sure to log out before closing the console window.

FlipFactory displays the Manage Factories window, where you perform most of your work when creating and designing factories.

Figure 5–2. Manage Factories window – toolbar and work areas



Toolbar icons for common commands.

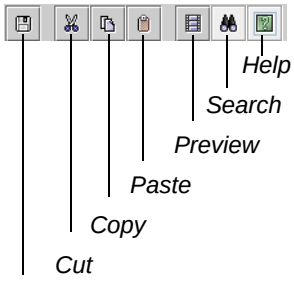
Factory panel – create and manage factories.

Enabler and Editor panels to select and set up objects in your factories.

Manage Factories Toolbar

The toolbar provides convenient access to common commands.

Figure 5–3. Toolbar in Manage Factories window



When an icon in the toolbar is appropriate for you to use (Save, for example, when you make a change to an account or copy, when you've selected an object or some text), it is enabled. Otherwise, the icon is disabled and displayed in gray.

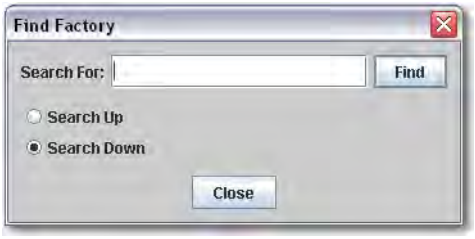
Save The Save icon is enabled when you have made a change to your account (by creating or deleting a factory, or making some change to a factory). Click Save to update your account in the FlipFactory database.

Cut, Copy, and Paste When you select an object in the factory panel you can cut, copy, or paste it. For example, you can select a factory and copy it, then paste it and rename it to make a second factory. You can also copy and paste objects from one account to another. You can also cut and paste text.

Preview Click Preview to visualize your output based on the pre-processing filters you've set up, before the media is actually transcoded.

Search Click Search to display a search dialog, where you can enter the name (or partial name) of a factory and find it. This is particularly useful in accounts with lots of factories.

Figure 5–4. Manage Factories window – toolbar and work areas



Help Click Help to display the online help page for the selected codec, process/analyze tool, filter, monitor, destination or notify.

Preview Click Preview to visualize your output based on the pre-processing filters you've set up, before the media is actually transcoded.

Work Areas

The Manage Factories window is composed of three work areas:

Factory Panel The factory panel displays your factories in hierarchical format, and allows you to create, delete and set up factories, open and close factories and building blocks to expose details, and focus on the area of your account you're currently working in without distraction.

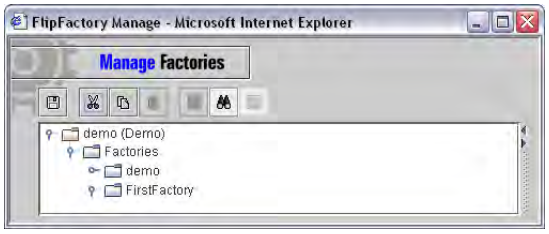
Enabler and Editor Panels As you work, FlipFactory displays enabler and editor panels directly to the right of the factory panel, Explorer-style. Use these panels to add and set up objects in a factory.

Factory Panel

The factory panel displays each factory in an account. Use this panel to create and build factories, create various factory components, and select

and operate on each of the components as you set up your factory to perform a specific type of transcoding job.

Figure 5–5. Use Factory Panel to create & manage factories



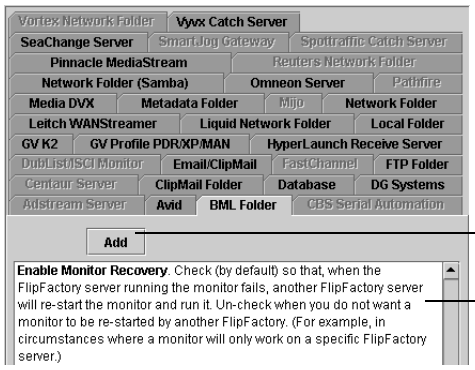
Click directly on a folder to select and operate on it. Click the Open/Close key to display (or hide) the folder's contents. Alternatively, double-click the folder to open or close it.

When you select a factory (or any object in it), FlipFactory displays either an editor panel or an enabler panel to the right of the factory panel.

Enabler Panels

Some folders allow you to add (or create) objects within them, including Monitors, Process/Analyze, and Notifications folders. Folders of this type display a panel of available objects when selected.

Figure 5–6. Use enabler panels to create factory objects



Click Add (or Enable) to create an instance of a FlipFactory object in this factory. Next, select it to configure it using the Editor Panel.

Online help describes in detail what this item does, plus details about configuration options and settings.

You use this panel to select a specific type of object (a monitor, for example) and create it by checking the Enable checkbox, or clicking the Add button. For example, if you click the Vortex Network Folder tab and click Enabled, FlipFactory creates a Vortex Network Folder monitor and displays it in the Monitors folder.

Below each tab, FlipFactory displays online help, including an explanation and details about each setting, value or parameter. When you are setting up an object in the editor panel, this is a great way to learn about each choice you need to make to set it up properly for your use.

After you create the object in the Enabler panel, click the new object to select it for editing. FlipFactory displays the proper editor panel for this type of object.

Editor Panels

FlipFactory provides editor panels to allow you to customize a specific object: a monitor, a video analysis, a codec, a notification method, and others. Whenever you select an editable object, FlipFactory displays the editor for that type of object.

For example, when you select a Local Folder destination FlipFactory displays the Local Folder editor.

Figure 5–7. Typical Factory editor panel

You use editor panels to view the current values and settings, and make changes. Some editors are simple (as in this case); others are complex.

FACTORIES

FlipFactory allows you to create multiple factories in an account. Factories are displayed in alphabetic order by name.

Creating a New Factory

FlipFactory provides two ways of making new factories: creating a new factory, or duplicating an existing factory.

Step 1 To create a new factory, select the Factories folder and right-click on it (immediately below the account folder) and select New.

FlipFactory creates a new, untitled factory and places it in the Factories folder. A new factory has no default functionality and doesn't create any new media. The building blocks (Monitor, Process/Analyze, Products, and Destinations) are created for you, but they are empty.

Step 2 Click the untitled factory to display the factory editor.

Step 3 Enter the factory name and description in the appropriate fields.

Step 4 Click Save to update the factory settings in the database.

Duplicating a Factory

You can also create a new factory by copying and pasting a factory you already created. If the new factory is similar to an existing one, this method may be more efficient than building a factory from scratch. You

can duplicate factories across accounts: copy the factory in one account, then log onto another account and paste it.

To create a new factory by copying and pasting, follow these steps:

Step 1 Select the Factory to copy, then right-click on it and select Copy.

Step 2 Click on the Factories icon. Click Paste in the toolbar, or right-click the Factories folder and paste.

Step 3 Click the new copy of the factory to display the factory editor.

Step 4 Update the factory name and description in the appropriate fields.

Step 5 Click Save to update the account in the database.

Once you have created a factory, you can modify your factory to transcode incoming media in a specific manner, store one or more output media files, and optionally notify recipients.

Deleting a Factory

To permanently remove a factory, select the Factory you want to delete, then right-click it and select Delete, or click Delete in the toolbar. You cannot delete a factory that has active monitors.

Note

You must disable all monitors and save your changes before you can delete a factory.

Before deleting a factory, you should save any changes you've made, so that the factory can be correctly deleted and all processes associated with the factory terminated (monitors, for example).

Caution

Deleting a factory is a permanent action. The only way to restore the factory is to import the account from an archive, if one was previously created.

USING MONITORS IN FACTORIES

Monitors are processes in FlipFactory that track changes in directories and other data stores on a wide variety of general computing, server, and specialized media platforms, in order to detect new media for automatic submission to a specified factory. After you add a monitor, you must configure it for use for your specific store and for use on your network.

Monitors you add to a factory, by default, are always on. To temporarily disable a monitor so that it will not process jobs on media added to the target directory, uncheck the Enable box in the monitor's editor panel and click Save. To turn it on again, open the editor panel, click Enable and click Save.

When new media is placed in the monitored location (a specific network server and folder, for example), the monitor initiates action with the media (according to its settings) to submit a job to FlipFactory.

Note

When you are moving media files to a network or FTP folder, Telestream recommends that you perform a Copy operation, not a Move operation. Copy operations actually duplicate the media file; move operations only alter the file structure, and cause all media to be considered new instantly.

Telestream recommends limiting new media file moves to 50 at a time. Significant volumes of new files can overwhelm the monitor process and take significant time to recover.

Monitors enable you to automatically submit media to a FlipFactory for processing. Monitors can poll local and network folders, FTP sites, incoming email, ClipMails, and edge servers from DG Systems, Vyvx, Pathfire, and others for new media files to process.

Note

If you have a FactoryArray, you should not use Local Folder monitors if you want all monitors to be recovered in the event of a FlipFactory failure. Local monitors are not recovered, because they use drive letter format to identify the folder.
To monitor a directory that is local to the FlipFactory, create a network monitor and select the local folder using a network path.

Local folder monitors do not refer jobs to other FlipFactories in the array, because they reference media only in local stores.

FlipFactory Monitors

FlipFactory provides monitors for the following systems, sub-systems, servers, and products. A base set of monitors are available in all FlipFactory editions.

Others are enabled by a specific, licensed option (MetaFlip and Pipeline, for example), or are enabled by the edition you license, based on your production and workflow requirements.

Table 5–1. FlipFactory Monitors

- Adstream Server
- Akamai/StreamOS
- Autodesk Stone
- Avid MediaStream
- Avid Send to Playback Monitor
- Avid Editor/Unity Server
- Centaur Server
- ClipMail Folder
- Database
- DG Systems
- Dub List/ISCI File
- Email/ClipMail
- Eclipse
- Extreme Reach
- FastChannel
- FTP Folder
- FTPS Folder
- GV Aurora FTP
- GV K2 Server
- GV Profile/DPR/XP/MAN
- HyperLaunch Receive Server
- Leitch WANStreamer
- Liquid Network Folder
- Local Folder
- Local Folder + Metadata
- Media DVX
- MediaStream
- Mijo
- Network Folder
- Network Folder (Samba)
- Network Folder + Metadata
- Omneon Server
- On The Spot Media
- P2 Local Folder
- P2 Network Folder
- Pathfire
- Pipeline EDL
- Reuters Network Folder
- SAN
- SeaChange BML Server
- SeaChange BMS/BMC Server
- SmartJog Gateway
- Spottraffic Catch Server
- Vortex Network Folder
- Vyvx Catch Server

Monitor Help Pages

The help page for each monitor displays in the monitor selection panel (Manage Factories > [account name] > Factories > [factoryname] > Monitors). Online help pages provide descriptions for each monitor, plus parameter specifications and application notes.

You can also display help pages for monitors you've added to your factory. Open the Monitors folder and select the monitor whose help page

you want to display. Click the Help button (at the far right of the toolbar at the top of the window) to display the help page in a new window.

Monitor Failure Notification

Each FlipFactory account can be set up so that FlipFactory will send a warning to the account's email address whenever a monitor in a factory goes offline or becomes disconnected. To enable monitor warning emails, see "Updating User Accounts" on page 6–17 and "Modifying User Account Information" on page 6–30.

Note

FlipFactory provides monitors for various directories and media servers – these are displayed in the Monitors editor panel. You can build your own monitors as well. Contact Telestream for information about building monitors using the FlipFactory SDK.

When new media arrives in one of these monitored folders (except for Local Folder), it is localized to the default store on the FlipFactory server and the job is automatically submitted to the factory for processing.

Adding a Playback/ Trim Label

In Network Folder, Network Folder (Samba), and Local Folder monitors, you can add a playback/trim label set for incoming media. The Playback/ Trim label set is used to enter Start and Stop times for clips.

These values are entered in the output media, and passed to the Process/ Analyze process where the values are used to trim the file if Media Processing is enabled, or utilized by playback systems that utilize logical start and stop times during playback.

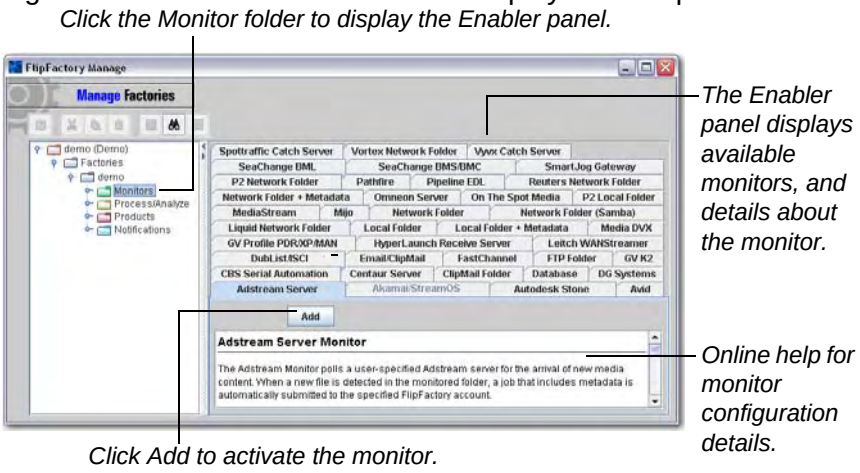
Table 5–2. Playback/Trim Label Parameters

Parameter	Description
Start Time (inclusive)	New beginning of the clip in HH:MM:SS:FF format, plus the FPS designation.
End Time (inclusive)	New end of the clip in HH:MM:SS:FF format, plus the FPS designation.

Adding and Deleting Monitors

To add or delete a monitor, open a factory and click to select the Monitors folder. FlipFactory display the Monitors Enabler panel:

Figure 5–8. Click Monitors folder to display enabler panel



Adding a Monitor

To add a monitor, follow these steps:

Note

You can have multiple monitors in your factory, but you may only have one monitor of each type. Details for each monitor are displayed in the console when Monitors is selected.

Step 1 Click the tab of the monitor you want to add to this factory.

Step 2 Click Add to create this monitor. FlipFactory immediately displays the monitor icon in your Monitors folder.

Step 3 Next, click on the monitor icon to display its editor.

Step 4 Set up the monitor to transcode and deliver media per your requirements.

Step 5 Click Save to update the factory.

If you create a Drive entry in the registry, you must restart the server to validate network share access. If the factory is part of a FlipFactory

group, restart the FlipEngine (Stopping and Starting FlipFactory (page 6-6)) to enable the monitor.

Note

After you create or change a monitor, be sure to display the System Status window and determine that the Monitor is active and operational (Status: Online). If it displays Disconnected (with a stop sign icon), the target server or directory may be unavailable, the network may have failed, or you may have an incorrect setting in your monitor.

Duplicating a Monitor

To duplicate a monitor from one factory to another, follow these steps:

Step 1 Open the Monitors folder to display the monitors in this factory.

Step 2 Right-click the monitor you want to duplicate and select Copy.

Step 3 Open the target factory, and right-click the monitors folder and select Paste. You can only create one monitor of each type in a single factory.

Step 4 Configure the monitor to meet your requirements.

Step 5 Click Save to update the factory.

Deleting a Monitor

To permanently remove a monitor from a factory, follow these steps:

Step 1 Open the Monitors folder to display the monitors in this factory.

Step 2 Right-click the monitor you want to remove and select Delete.

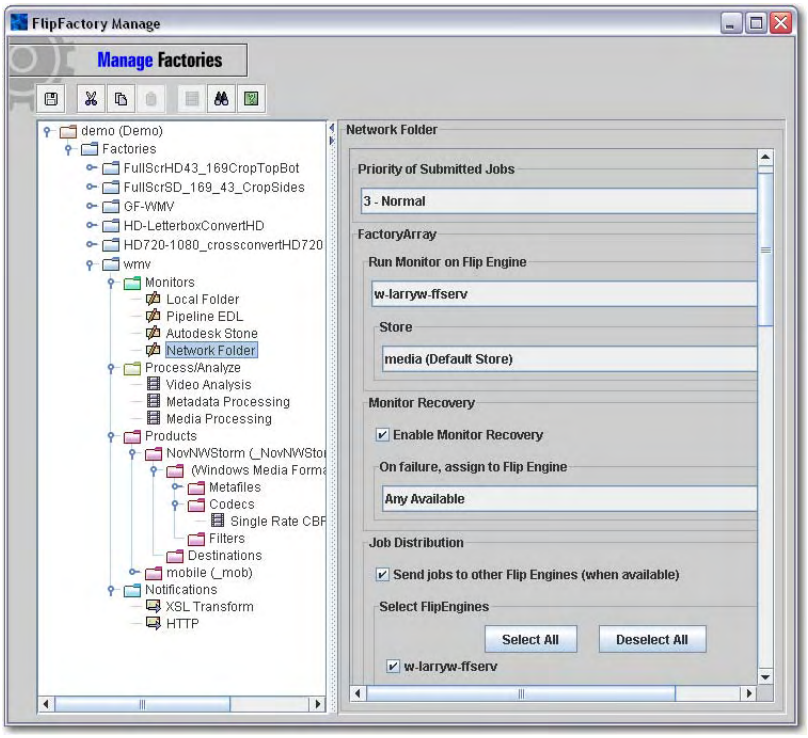
FlipFactory immediately and permanently removes the monitor from the Monitors folder.

Step 3 Click Save to update the factory.

Using the Monitor Editor Panel

When you select a monitor in the Monitors folder, FlipFactory displays the monitor editor, customized for the specific monitor parameters.

Figure 5–9. Sample monitor editor



Some controls are common to all monitors, some are common to specific types of monitors (file systems, for example), some are licensed features (FactoryArray, for example), and others are unique to a specific monitor.

Set up the monitor by selecting options, enabling or disabling features, and specifying values. For details about each monitor provided in FlipFactory, select the Monitors folder in the console and display the tab of the monitor you're configuring to display online help, which describes each control in the panel. You can also display help for a specific monitor you've already created, by selecting it in the left panel to display its editor panel on the right, then clicking Help.

Note

When you create or change a monitor, be sure to display the System Status window and determine that the Monitor is active and operational (Status: Online). If it displays Disconnected (with a stop sign icon), the target server or directory may be unavailable, the network may have failed, the FlipEngine may not have correct authentication for the monitored folder, or you may have an incorrect setting in your monitor.

Authenticating Monitored Folders that use Windows Networking

Monitors designed to access network-based Windows servers use Windows Networking. These have a Domain/Workgroup Name parameter; enter the host or workgroup name for the server (without preceding double slashes), then click Browse to locate and select the network server path to monitor.

For the FlipEngine to access the target server and directory, you must create a Drive entry in the FlipFactory server's registry with the same root entry. This drive entry contains the username and password to authenticate access, and is matched on the root.

For example: You create a monitored folder value: `\\NEWSSERVER\IN\MEDIA\FAREAST`, that points to a share, and you create a Drive Entry path key value: `\\NEWSSERVER`. In the Drive entry, you provide a username and password to provide authentication. See "Accessing Network Shares with Custom IDs" on page 7–16 for details.

Click Save to update the factory.

Note

If you specify a FlipEngine in the monitor which is part of a load balance group or FactoryArray – not the local FlipEngine – you must restart that FlipEngine to activate the monitor. When the FlipEngine restarts, FlipFactory adds this monitor to the list of monitored locations.

Monitors with Metadata Processing

FlipFactory provides some monitors that enable optional metadata processing. These monitors are designed to offer you the ability to pass through metadata as part of your workflow.

Avid Monitor

You can configure an Avid monitor to process vendor-specific spot label metadata. You can select two metadata sources: a specific XML file, to produce spot labels for promos for example, or you can select Parse media filename, to create specifically-formatted file names including House ID, ISCI code, duration and spot title, both options allowing the metadata to pass through with the job.

If you select XML file, your operators will submit two files, the media file and the associated spot label XML file. The XML file must be named identically to the media file, plus the suffix *xml*. For example, *joecool.mpg*, and *joecool.mpg.xml*.

If you select Parse media filename, you select which elements you're including (House ID, ISCI code, duration, spot title) and then edit the input media's file name accordingly, using the underscore character as a separator: *billorielly_AUCD5543-VLET-422-25121_00074000_oprah.mpg*, for example.

To enable metadata processing, follow these steps:

Step 1 Open the Avid monitor editor panel

Step 2 Check Process and Attach Metadata

Step 3 Set Metadata Source to:

XML File – browse and select the XML file you have edited

–or–

Parse Media File Name – ensure that media files submitted to this monitor follow this naming convention (based on your selections):

name_iscicode_duration_title.suffix

For more details, see the online Avid Monitor help page.

Network & Local Monitors

Network and Local monitors are equipped with general purpose spot label metadata processing, to extract the labels and attach them to the job. (These two monitors are *also* capable of FlipScan processing if licensed; generally, you should not check both at the same time.)

You can select an XML file or parse a media filename, as described above (in Avid Monitor).

To enable metadata processing, follow these steps:

Step 1 Open the Network monitor editor panel.

Step 2 Check Process and Attach Metadata.

You should submit two files simultaneously: the media file and the associated XML file. The XML file must be named identically to the media file, plus the suffix *xml*. For example, *joecool.mpg*, and *joecool.mpg.xml*. If you don't submit the XML file in the same directory as the media file, specify the path in the XML File Location field.

For more details, see the online Network or Local Monitor help page.

Network + Metadata & Local + Metadata Monitors

Network + Metadata and Local + Metadata monitors are equipped with advance, general purpose metadata processing, but do not support FlipScan.

To enable metadata processing, follow these steps:

Step 1 Open the Network monitor editor panel.

Step 2 Check Advanced.

Step 3 Select a matching XML file, or a metadata template. If you select a matching XML file, supply the xml extension. If you select a template, supply the template name.

Step 4 Select how to insert the data into the job ticket: as a metadata label, the last child of the XPath selected node, or a replacement of the XPath selected node.

Step 5 If you transform the metadata, the results of the transformation are inserted; otherwise, the entire XML file content is serialized and placed in the job ticket intact. When transforming metadata, you can choose an xsl stylesheet supplied, or you can use them as templates for modification, or write your own to meet your output specifications.

You should submit your XML file simultaneously with the media file. The XML file must be named identically to the media file, plus the suffix you specify.

For more details, see the online Network + Metadata or Local + Metadata Monitor help page.

USING PROCESSING AND ANALYSIS TOOLS

FlipFactory provides several media processing and analysis tools that allow you to expose specific characteristics of your input media and assist you in applying filters intelligently. Most tools extract values and generate metadata for use in later job tasks; you can also view graphs and reports to observe the metrics of your input media.

Its important to remember that process and analysis tools only operate on *input* media; thus, they are located directly at the factory level. Filters, on the other hand, operate on *output* media, so filters are at the *product* level, and you can have a different set of filters for each product in a factory.

FlipFactory provides the following process and analysis tools:

- Audio Analysis
- Color Remapping (page 5-19)
- GraphicsFactory Template Processing (page 5-19)*
- Media Expansion (page 5-19)
- Media Processing (page 5-19)
- Metadata Processing (page 5-20)
- Neilsen Audio Watermark (page 5-20)*
- Philips Video Watermark (page 5-20)
- Thomson Video Watermark (page 5-20)*
- Vertical Blanking (page 5-20)
- Video Analysis (page 5-21)

Note

Online help, including template editor specifications and application notes are displayed in the Manage Factories console when the Process/Analyze folder is selected. Click a process/analyze tool tab to enable or disable it and to read about how to set it up in the editor panel.

You can also display the help page for tools you've enabled in your factory. Open the Process/Analyze folder and select the tool whose help page you want to display. Click the Help button (at the far right of the toolbar at the top of the window) to display its help page in a new window.

* Some processing and analysis tools are enabled by a specific license option (Philips Video Watermark, GraphicsFactory, Neilsen Audio Watermark, and others), and are enabled by the edition you license, based on your production and workflow requirements.

Audio Analysis

The Audio Analysis PA tool provides audio processing functions including level analysis, gain correction and waveform display.

The Audio Analysis tool measures the audio signal over the entire duration of the media content. The results of the analysis are added to the job as a metadata label (Audio Level) that contains the following information:

- Peak signal level on any audio channel
- Peak loudness of the audio content. Loudness is determined by calculating the RMS value of the signal over a certain number of audio samples
- Gain (or attenuation) required to correct the content so that the peak loudness does not exceed the reference level.

The Audio Gain filter (available in all Telestream supplied encoders) can use this information to automatically correct the audio levels to a specific reference.

Color Remapping

The Color Remapping processor controls the assignment and mixing of the input color channels to the output color channels.

GraphicsFactory Template Processing

The GraphicsFactory processor allows you to manually submit jobs or submit jobs via monitors directly in FlipFactory workflow, and use GraphicsFactory to automatically mark video with audio and graphics, based on templates you set up using GraphicsFactory Template Editor.

Use the GraphicsFactory processor only when you have variables in the template you're applying, and you're creating a two-stage workflow (by creating a Duplicate Original product) so that an operator can view the first job, provide values for each variable in the template, and resubmit the job for processing by GraphicsFactory to produce your final output.

If your template has no variables, or variables with default values that do not need to be modified during job processing, you only apply a GraphicsFactory filter directly in the product – do not apply this GraphicsFactory processor.

Media Expansion

The Media Expansion module allows you to add black video and silent audio as fill to the head and/or tail (or to internal segments) of the media as it is being transcoded. You should not use both the Media Expansion and Media Processing tool in the same factory. Instead, forward it to a second factory where the Media Processing tool can be applied as the next step.

Media Processing

The Media Processing module allows you to trim media, and to set up slate/spot detection.

Two steps are required to trim a clip:

1. Enable the clip trimming filter in the factory

2. Add a Playback/Trim metadata label when submitting a job to that factory.

When you enable slate/spot detection, a playback/trim label can be generated, along with values, and the metadata label is inserted in the output media.

Metadata Processing

The Metadata Processing tool inserts the configured template metadata into the job ticket for each job in this factory.

Use the Metadata tool anytime additional custom metadata must be added to the transcode process. These jobs are submitted via the Local Folder + Metadata monitor. A variety of templates, schemas, and maps are available, and you can create your own. For more details on metadata processing, contact Customer Service or log on to the FlipFactory Web site and view metadata processing app notes.

Neilsen Audio Watermark

The Neilsen Audio Watermark transform filter adds an inaudible Nielson Audio Encoding System watermark to the media during transcoding. This is an optional, licensed feature.

Philips Video Watermark

The Philips Video Watermark transform filter adds an invisible Philips Video System watermark to the media. This is an optional, licensed feature.

Thomson Video Watermark

The Thomson Video Watermark transform filter adds an invisible Thomson/Nextamp watermark to the media. This is an optional, licensed feature.

Vertical Blanking

This module provides processing and analysis of the Vertical Blanking Interval (VBI). The VBI processing filter allows blanking data to either be extracted and decoded, or synthesized given alphanumeric input.

The synthesis module will take source closed caption textual information and synthesize an analog signal based upon the source information.

There are two methods used to preserve the Vertical Blanking Interval (VBI) information within digital media files:

In-band

The entire VBI is compressed along with the active picture area as a single image. This method is common in motion JPEG compression systems and is also employed in MPEG2 ML@422 profile encoding.

Out-of-band

Specific VBI lines are carried as uncompressed pixel data in a separate stream of the digital media file. For example, in MPEG2 based formats it is common to carry the uncompressed VBI lines as user data packets within the video elementary stream.

The VBI processor combines out-of-band blanking with the active picture allowing VBI information to be re-encoded or analyzed.

The Closed Caption (CC) decoder filter can extract captions from raw pixel data or from encoded MPEG or DV streams. The caption text is stored in a metadata track and is available to other FlipFactory processes. For example, the FlipFactory Email Notification will forward the captions as a text file attachment.

Blanking Synthesis

The blanking synthesis option works by converting closed caption textual information provided as by a source decoder. This textual information is synthesized into an analog representation of the underlying alphanumeric data. The blanking synthesis filter can also work in a replacement mode, whereby a source with in-band data (for example, a 720x512 NTSC frame) can have the blanking area replaced with synthesized information provided by the source filter.

Video Analysis

The Video Analysis module provides various video processing and analysis functions including keyframe extraction.

KeyFrame Extraction

The keyframe extraction tool captures still frames from the source media as it is being flipped. The tool can be configured to capture a single image, capture multiple images at regular intervals, or automatically capture a variable number of images based upon scene transitions.

For single capture mode, the time parameter determines the time at which to capture the image.

For regular intervals, the time parameter determines the interval of time at which to repeatedly capture images.

For scene transitions, the time parameter determines the minimum interval of time between successive image captures. The sensitivity parameter, for scene transitions, is used to determine whether a scene change has occurred. Low sensitivity values generally result in more frequent image captures. High sensitivity settings result in fewer image captures. Each keyframe is cropped, resized and then compressed in JPEG format according to the user parameters.

The keyframes are stored in a metadata track and are available to other FlipFactory processes. For example, the FlipFactory Email Notification will forward each keyframe image as a separate attachment.

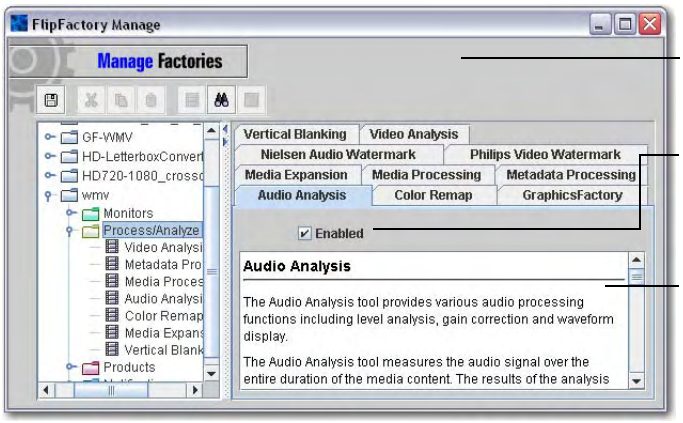
Timecode Burn-in

The Timecode burn-in feature allows the source timecode, when present, to be overlaid onto the current video image. The source material must have timecode present, in a detectable format by FlipFactory. As a rule of thumb, if timecode is presented in the clip properties portion of the Job Status window; this timecode will also be burned-in to the newly created media format.

Creating and Deleting Process/ Analysis Tools

To create or delete a process or analysis tool, open your factory and click on the Process/Analyze folder. FlipFactory displays the Enabler panel:

Figure 5–10. Process/Analyze folder & enabler panel



Enabling a Process/ Analysis Tool

To add a process or analysis tool to your factory, follow these steps:

Step 1 Click the tab of the tool you want to add.

Step 2 Click the Enabled checkbox to enable the tool. FlipFactory immediately displays the icon in your process/analyze folder.

Step 3 Next, click on the new icon to display its editor.

Deleting a Process/ Analysis Tool

To permanently remove a process/analysis tool, follow these steps:

Step 1 Open the Process/Analyze folder to display the tools you have enabled.

Step 2 Click the Process/Analyze folder to display the Enabler panel.

Step 3 Click the tab of the tool you want to remove.

Step 4 Click the Enabled checkbox to de-select this tool.

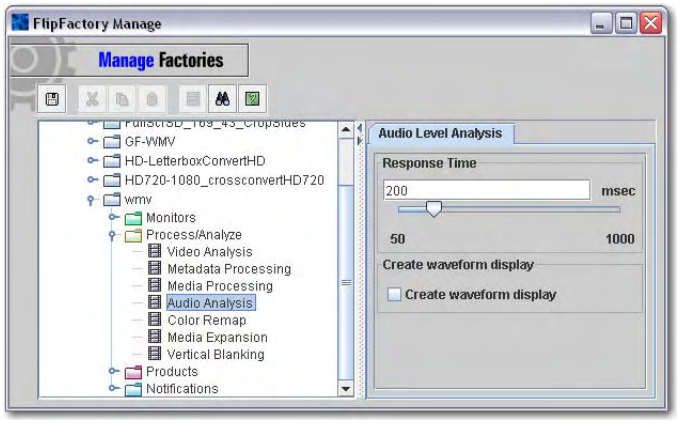
FlipFactory immediately (and permanently) removes the tool and its icon from the folder.

Step 5 Click Save to update the factory.

Using the Process/ Analysis Tool Editor

When you select a specific tool in the Process/Analyze folder which you've enabled, FlipFactory displays its editor. The fields and controls in each editor vary, depending on the tools feature set.

Figure 5–11. Sample Process/Analysis tool editor



Set up the tool by selecting options, enabling or disabling features, and specifying values.

Click Save to update the factory.

CREATING PRODUCTS

You specify transcoding options for each job in a factory by selecting and setting up a media encoder/ format (and its codecs) in the Product folder. You also use the Product folder to specify delivery options for your output media. You can also specify metadata and pre-processing filter parameters.

Note

Most products produce media files that have been decoded and re-encoded (transcoded) or directly converted from one file format to another.

However, several specialized products are available. For example, Duplicate Original is a file copy process, and Analysis is a 'no-op' hook that enables you to submit input media files for processing only by process/analysis tools, for example.

FlipFactory allows you to create as many products (processes which create output media files) as you want in a factory. For each output media file you want to produce, create a product by follow these steps:

Step 1 Make a new product (details follow).

Step 2 Name the product and specify a wrapper or media format.

Step 3 For Windows or Real Media format products, specify the Redirector metafiles.

Step 4 Select movie, video and audio codecs as appropriate and configure them.

Step 5 Select and set up pre-processing filters you want to employ.

Step 6 Set up your destinations for the output media files.

Note

Output media files from any product can be used as input when resubmitting or forwarding a job. To make the output media available, be sure to check the Resubmit/Forward button at the bottom of the Product selection panel on the Resubmit/Forward window.

Creating and Deleting Products

To create or delete a product, open your factory to display the factory's folders.

Creating a Product – Naming and Specifying Media Format

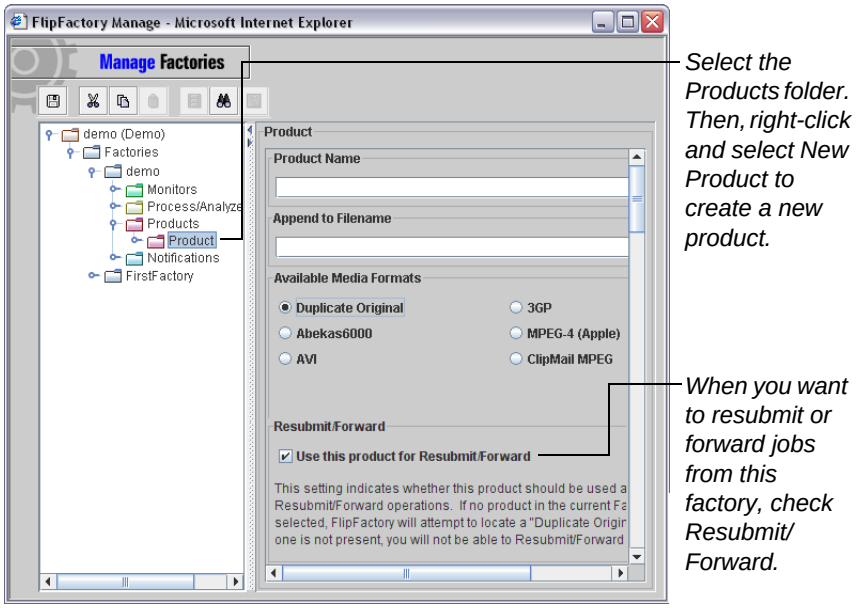
To specify an output media file with a specific media format, create a new product for your factory. To create the product, follow these steps:

Step 1 Select the Products folder in your Factory, then right-click it and select New Product from the menu.

FlipFactory creates and displays a folder named *Product* in your Products folder. When you first create a new product folder, it only contains a Destinations folder.

Step 2 Next, click on the Product folder you created to display its editor.

Figure 5–12. Products editor panel (abbreviated product list)



Step 3 Identify the folder by entering a product name and optionally, a phrase you want appended to the output filename.

For example, if you create a product folder for a QuickTime media file, you might provide a product name *QuickTime*, and a project phrase which appends to each file; *TreeClimb*, for example.

Step 4 Select the media format for this product.

When you select a media/server/file format, FlipFactory creates the media format folder. You may change the media format at any time, but you should update the product name field when you do, to avoid misleading product folders.

If you plan to resubmit or forward jobs using the media from this factory, check Use this Product for Resubmit/Forward. Optionally, you can add a Duplicate Original product.

Step 5 Click Save to update the account in the database.

Note

You can create a new product by copying and pasting an existing product. If the new product is very similar to an existing one, this may be easier than creating it from scratch.

Copying a New Products Folder

To create a new product in this manner:

Step 1 Right-click and copy the source product.

Step 2 Click on the Products icon and then click Paste in the toolbar. Or, right-click on the Products folder and select Paste from the popup menu.

Step 3 Click the new copy of the product to display the product editor.

Step 4 Update the product name and append to filename values in the appropriate fields.

Step 5 Select the media format for this product.

Step 6 Click Save to update the account in the database.

Step 7 Set up the media format you've selected for this product.

Deleting a Product

To permanently remove a product from a factory, follow these steps:

Step 1 Open the Products folder to display the products.

Step 2 Right-click the product you want to remove and select Delete.

– or –

Select the product folder and click the Delete icon in the toolbar.

Step 3 FlipFactory immediately (and permanently) removes the product and its icon from the folder.

Step 4 Click Save to update the factory.

SPECIFYING REDIRECTOR METAFILES

Two media formats have redirector metadata: Windows Media and Real Media. When you click the Metafiles folder in these media folders, FlipFactory displays the editor.

Step 1 Select the Redirector alias.

Step 2 Click the newly-created metafile to display its editor.

Step 3 Enter the metafile data.

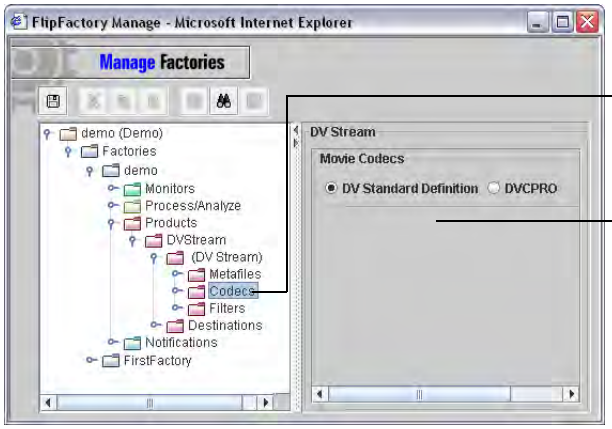
Step 4 Save the factory.

SELECTING AND SETTING UP CODECS

Each product has a specified media format, which provides one or more movie, video or audio codecs from which you can select (depending on the media format you specified), often with optional settings.

To make codec selections, open the Products > Product folder (named by you) and then open the Codecs folder. FlipFactory displays the Codec Enabler panel for the selected product (encoder), which lists available codecs.

Figure 5–13. Typical Codec Enabler panel



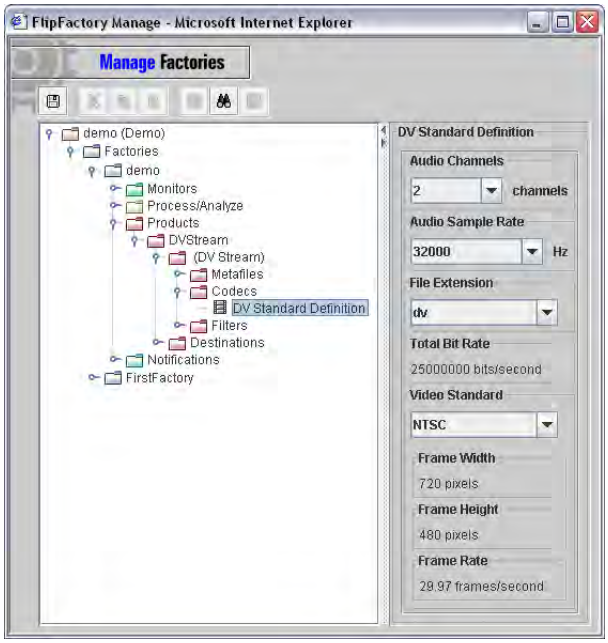
Select a movie codec (if available in this media format), or select from the available video and/or audio codecs, depending on the media format.

Click Save to update your account.

Next, open the Codecs folder to display the codecs you've selected. Click on each codec to set it up by selecting options, enabling or disabling

features, and specifying values. FlipFactory displays the editor panel for the selected codec.

Figure 5–14. Typical Codec Editor panel



Check and update each setting, provide values as required, and enable or disable options. You may have to scroll down to view the entire editor. (You can use the slider to decrement and increment values by its allowed increment or you can use the left or down arrow keys to reduce the value and the right and up arrow keys to increment the value.)

When you’re done setting up codecs, click Save to update the account.

FLIPFACTORY MEDIA FORMATS

FlipFactory encodes media into these media formats (your set of encoders may vary. The encoders that you can use is based on your license or the FlipFactory edition you have installed.)

Miscellaneous Formats

The following file formats are specialized formats used to produce specific output, and are not considered transcoders.

Table 5–3. Misc. formats

- Duplicate Original
- Keyframe
- Analysis

Duplicate Original The Duplicate Original product is a file copy process – it does not transcode the essence; it just duplicates the file. When Pipeline is selected as input, the output file is a TIFO file.

KeyFrame A Keyframe product creates individual keyframe files, based on your settings.

Analysis An Analysis does not encode or copy media and thus, there is no output media file. The Analysis product is used as an access point for users who want to submit input media for pre-processing by one or more process/analysis tools.

Streaming Media Formats

Table 5–4. Streaming media formats

- 3GP
- Flash 8 (VP6)
- Flash 9
- Flix Exporter
- H.264
- Helix (Real 10)
- MPEG-4 (Apple)
- MPEG Layer 3 Elem. Stream
- QuickTime
- QuickTime Streaming
- Real Networks
- VC1
- VideoClipStream
- WAVE Audio
- Windows Media Format
- PacketVideo MPEG4

Broadcast Media Formats

Table 5–5. Broadcast media formats

- Abekas 6000
- DV AVI Stream
- DVCPRO with embedded audio
- EVS
- GV Profile GXF
- IPTV Transport Stream
- Leitch Format
- Matrox
- MediaStream
- Omneon Server
- Quantel
- SeaChange Format
- Sony MAV70
- Vortex

Professional Video Media Formats

Table 5–6. Professional video media formats

- Autodesk Stone Format
- AVI
- Avid TransferManager Format
- ClipMail MPEG
- Dolby (AC3/5.1) Audio
- DV Stream
- DVD Stream
- Final Cut & QuickTime NLE
- IPV SpectreView
- IPTV Transport Stream
- Liquid
- MPEG1 System Stream
- MPEG2 Program Stream
- MXF Stream
- OMF Stream
- VOD Transport Stream

USING FILTERS

Filters operate on output media – the files you make in a factory by transcoding the input. You can enable as many filters as you need in each product in your factory. For each set of filters enabled in a given product, you can only have one filter of each type. To process a media file more than once with the same filter, you can set up cascading jobs.

FlipFactory provides the following filters:

Table 5–7. FlipFactory Filters

- Audio Channels
- Audio New Channel
- Audio Fade Up/Down
- Audio Level
- Audio Phase Invert
- Blur
- Color Rescale
- Contrast
- Crop
- Darken Region
- Field Order Conversion
- Frame Mode
- Gamma Correction
- GraphicsFactory Template
- Hue
- Mask
- MotionResolve™
- Noise Reduction
- Non-Linear Resize
- Overlay
- QuickTime Overlay
- Saturation
- Screen Subtitles
- Sharpen
- Source Video Timing
- Telecine Options
- Temporal Interpolation
- Text Overlay
- Video Fade In/Out
- Video Filter Override

Note

Some filters may not display, because they optional and are only enabled in specific editions or via an additional license.

Monitor Help Pages

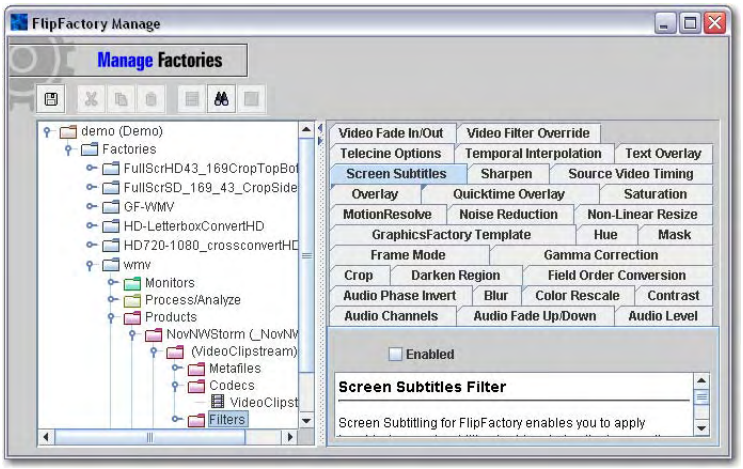
The help page for each filter displays in the filter enabler panel. Online help pages provide descriptions for each filter, plus parameter specifications and app notes.

You can also display help pages for filters you've enabled in your factory. Open the Filters folder and select the filter whose help page you want to display. Click the Help button (at the far right of the toolbar at the top of the window) to display its help page in a new window.

Creating and Deleting Filters

To create or delete a filter, open the product folder inside the Products folder and select the Filters folder to display the Filter enabler panel.

Figure 5–15. Filters enabler panel



Enabling a Filter

To enable a filter, follow these steps:

Step 1 In the Enabler panel, click the tab of the filter you want to create.

Step 2 Click the Enabled checkbox to enable this filter. FlipFactory creates the filter and displays its icon in the filters folder.

Step 3 Click Save to update this account.

Step 4 Next, click on the new filter icon to display its editor.

Deleting a Filter

To delete a filter, follow these steps:

Step 1 In the Enabler panel, click the Tab of the filter you want to delete.

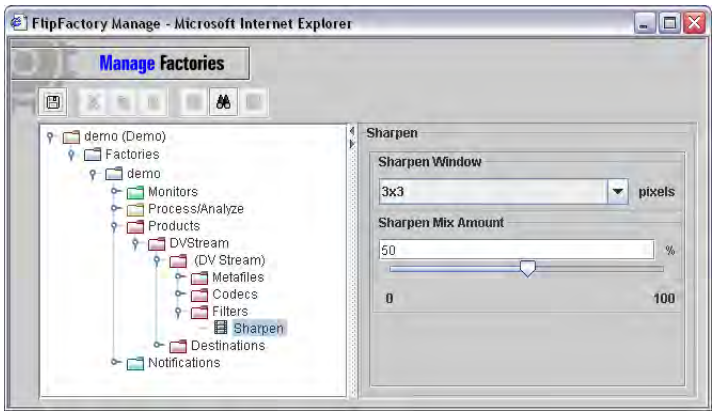
Step 2 Click the Enabled checkbox to disable this filter. FlipFactory permanently removes the filter.

Step 3 Click Save to update this account.

Setting up a Filter

To edit a filter, select it in the Filters folder. FlipFactory displays the editor panel for the selected filter.

Figure 5–16. Typical filter editor panel



Check and update each setting, provide values as required, and enable or disable options. You may have to scroll down to view the entire editor.

When you're done setting up each filter, click Save to update the account.

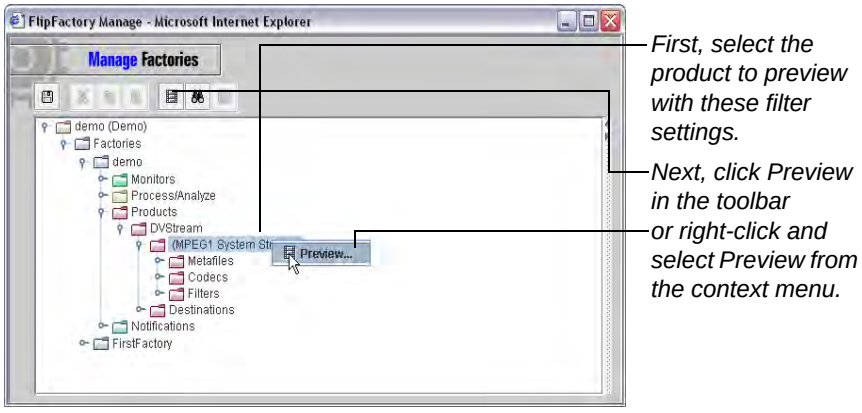
Previewing Filter Effects

The preview function in FlipFactory allows you to view your pre-processing filter settings before you transcode the media.

Step 1 To preview the media, first enable and set up your filter settings.

Step 2 Next, select the product folder and then click the Preview icon in the toolbar or right-click and select Preview from the context menu.

Figure 5–17. Previewing filter effects

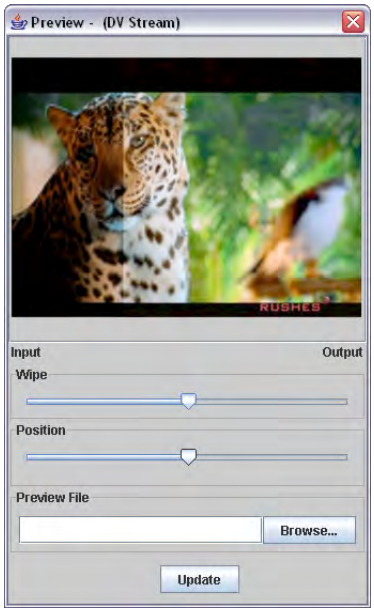


FlipFactory displays the Preview window.

Note

You can display multiple Preview windows simultaneously so that you can compare the effect of your filter settings on more than one file – or different parts of the same file.

Figure 5–18. Preview Window displays results of filter settings



Step 3 Type the path and file in the Preview File field, or click Browse to locate and select the file.

Step 4 Adjust the Wipe to display more or less pre-filter and post-filter video, and adjust the Position to view various frames in the medial

Note

The Preview tool must decode the file to the frame you're previewing – so it must be a functional factory. Time to preview depends on the file size and location of the frame in the file.

The file you want to preview must reside on a physical or logical drive of the FlipFactory server. A file on a different server must be logically mapped to FlipFactory.

Step 5 Click Update to view the Preview frame.

Step 6 To make changes to the filter settings, select the desired product and modify it. Display the Preview window again and click Update.

Repeat the process until the desire effect is reached.

ADDING DESTINATIONS

FlipFactory allows you to deliver your finished media to locations via a variety of delivery methods, or *destinations*, including local folders, network folders, FTP folders, broadcast servers and Telestream Clip appliances. For each product, you may have several destinations. FlipFactory places a copy of the output media on each destination when the job is complete.

FlipFactory provides the following destinations (the enabled destinations depend on the edition you license).

Table 5–8. FlipFactory Destinations

- Abekas Server
- Akamai StreamOS/AMD
- Autodesk Stone File System
- BML Server
- e-VTR Server
- Email Attachment
- FlipFactory Storage
- FTP Server
- GV K2
- GV Profile (Profile & M-Series iVDR)
- GV Profile PDR/XP/MAN
- Kasenna MediaBase
- Leitch WANStreamer
- Liquid Network Server
- Local Folder
- MediaStream
- Network Folder
- Network Folder (Samba)
- Omneon Director
- P2 Local Folder
- Quantel Server (ISAGateway)
- Scott Studios FTP
- SeaChange BML
- SeaChange BMS/BMC
- Secure FTP Server
- SGI Server
- Telestream ClipMail
- TransferManager Ingest
- Vortex Network Server
- Web Server (Local)
- WebDAV Server
- XDCAM Server

Online help pages in the FlipFactory console provide descriptions for each destination plus parameter specifications and application notes.

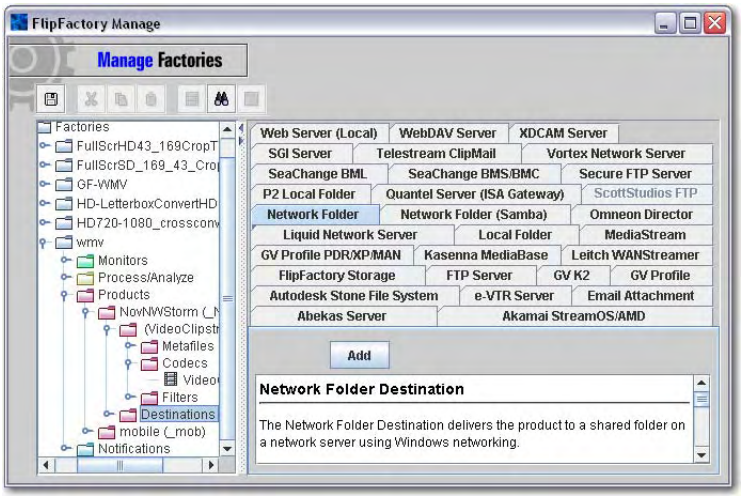
To display the help page for a specific destination, display the Manage Factories window. With the Destinations folder selected, click the Destination tab to display the help page directly below.

Adding & Deleting Destinations

To add or delete a destination, open the factory. Open the Product folder and then the products folder (which is named by you when created) and select the Destinations folder.

FlipFactory displays the Destinations Enabler panel.

Figure 5–19. Destinations folder and enabler panel (sample)



Adding a Destination

To add a destination for the selected product, follow these steps:

Step 1 Click the tab of the destination type you want to add to this product.

Step 2 Click the Add button to add this destination. FlipFactory immediately displays the destination icon in your Destinations folder.

Step 3 Next, click on the destination icon to display its editor.

Step 4 Set up the destination to meet your needs.

Step 5 Click Save to update the factory.

Deleting a Destination

To permanently delete a destination from a product, follow these steps:

Step 1 Open the Destinations folder.

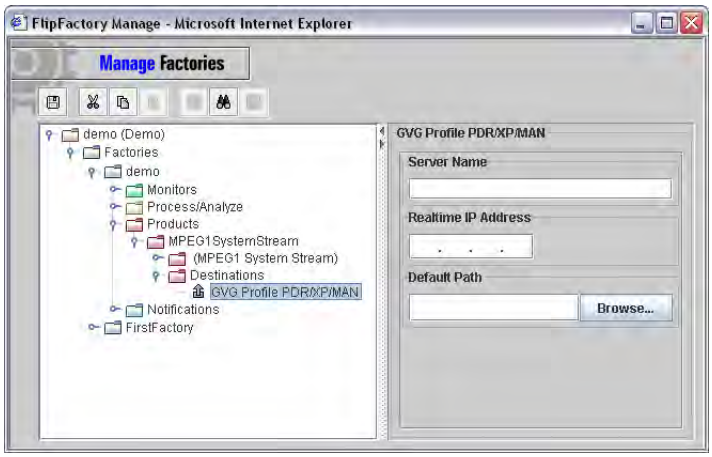
Step 2 Right-click the destination you want to remove and select Delete from the menu. FlipFactory permanently removes the destination (and its icon) from the Destinations folder.

Step 3 Click Save to update the factory.

Using the Destinations Editor

When you click a specific destination in the Destinations folder, FlipFactory displays its editor. The fields and controls in each editor vary, depending on the destination itself.

Figure 5–20. Typical Destination editor



Set up the destination by selecting options, enabling or disabling features, and specifying values. Click Save to update the factory.

ADDING NOTIFICATIONS

FlipFactory provides several methods for notifying users and systems that a job has been completed and the output media delivered. FlipFactory provides the following notifications:

Table 5–9. FlipFactory Notifications

- Avid Auto Forward
- Avid TransferManager
- Dub List
- External Shell
- Florical
- Forward
- HTTP
- IBM VideoCharger
- Mail
- MDML File Sample
- MediaBrowse
- Pathfire
- Reuters NewsML
- SeaChangeMvl
- Slate/Spot Auto Forward
- Sundance
- Telestream ClipMail
- Telestream ClipMail FTP
- Virage VideoLogger
- VOD Transform
- XSL Transform

Some destinations are enabled by specific licenses.

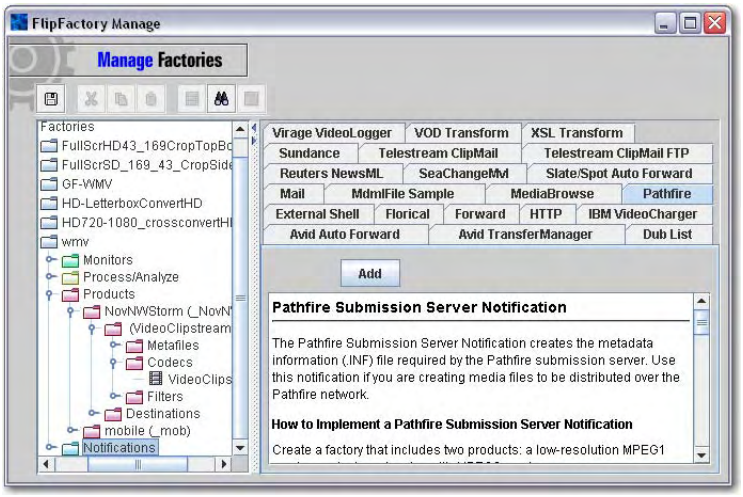
Online help pages in the FlipFactory console provide descriptions for each notification plus parameter specifications and application notes.

To display the help page for a specific notification, display the Manage Factories window. With the Notifications folder selected, click the Notifications tab to display the help page directly below.

Creating and Deleting Notifications

To create and delete notifications, open the factory. Select the Notification folder to open and display the Notifications panel.

Figure 5–21. Notifications panel



Adding a Notification

Click the tab of the notification you want to add.

Click Add to create a notification. (Unlike monitors, you can create multiple notifications of the same type in a single factory.) FlipFactory immediately displays the notification icon in your Notifications folder.

Next, click on the notification icon to display its editor.

Deleting a Notification

To permanently remove a notification from a factory, follow these steps:

Step 1 Double-click the Notifications folder to display the notifications in this factory.

Step 2 Right-click the notification you want to remove and select Delete.

FlipFactory immediately (and permanently) removes the notification and its icon from the folder.

Step 3 Click Save to update the factory.

Duplicating a Notification

To duplicate a notification in the same factory or a different factory, follow these steps:

Step 1 Open the Notifications folder to display the notifications in this factory.

Step 2 Right-click the notification you want to duplicate and select Copy.

Step 3 Open the target factory, right-click Notifications folder and select Paste.

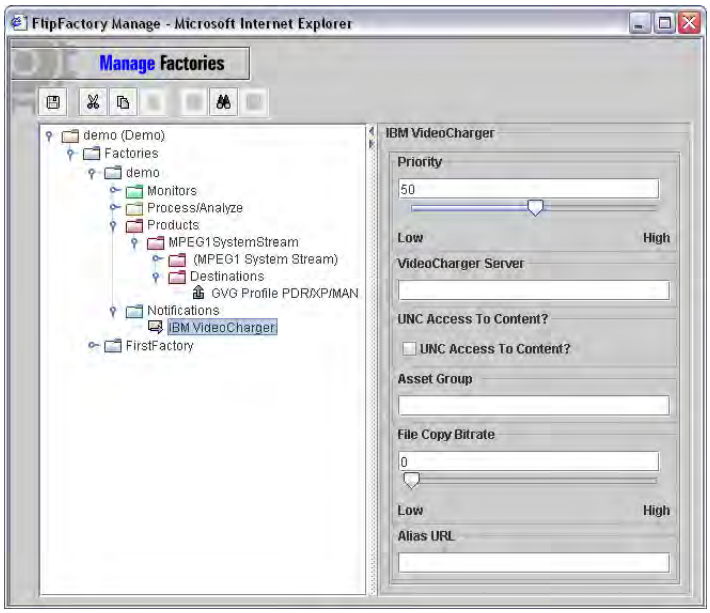
Step 4 Configure the notification to meet your requirements.

Step 5 Click Save to update the factory.

Using the Notifications Editor

When you click a specific notification in the Notifications folder, FlipFactory displays its editor. The fields and controls in each editor vary, depending on the notification itself.

Figure 5–22. Typical Notifications editor



Set up the notification by making selections and specifying values.

Click Save to update the factory.

Note

The Priority slider sets the Notification priority. Notifications will be processed based on this setting. Those with higher priority are processed first. Telestream recommends that Email notifications occur with the lowest priority, so that they can notify users of failures that occurred during other notifications.

CHAPTER 6

Submitting & Working with Jobs

This chapter describes how to submit jobs via the Submit Job window, via ClipMail appliances, and via email. You'll also learn how to submit a job manually, or submit jobs automatically by setting up monitors, how to monitor jobs in progress, and how to view details about the tasks completed in jobs that have already been processed by FlipFactory.

FlipFactory has fault-tolerance built in. Each job is segmented into specific tasks. Each task is recorded in the database after it has completed successfully. In the event that a specific task does not complete successfully, FlipFactory determines the last successfully completed task and restarts the job at the next task.

However, if a task does not complete because of a license problem, an incorrect FTP address or other error, FlipFactory notifies you of the probable cause. It does not retry the job.

Topics

INTRODUCTION

FlipFactory provides several different ways to submit a job.

Manual Submission You submit a job manually by clicking Submit Job in the User panel. This provides you the opportunity to make last-minute decisions, or perform factory testing, for example. For details, see "Submitting a Job Manually", immediately following.

From a Telestream ClipMail™ Appliance Use this method when you have media residing on a ClipMail appliance, or the media is being encoded onto a ClipMail appliance.

By Email This is an ideal way for allowing individuals to transcode media without having full network access to your FlipFactory server. The media you submit for processing may be attached to the email or referenced by an external link. For details for submitting jobs via email, see Submitting a Job from Email (page 6-13).

Placing Media in a Monitored Folder Save media in a monitored folder, server, store, or appliance. Use this method when you want to automate the process of submitting media for transcoding by FlipFactory immediately when the media file is created in the target store or location.

From Custom Applications If you have special requirements – or specialized systems – for submitting media, you can use Telestream's FlipFactory SDK to create your own media submission software.

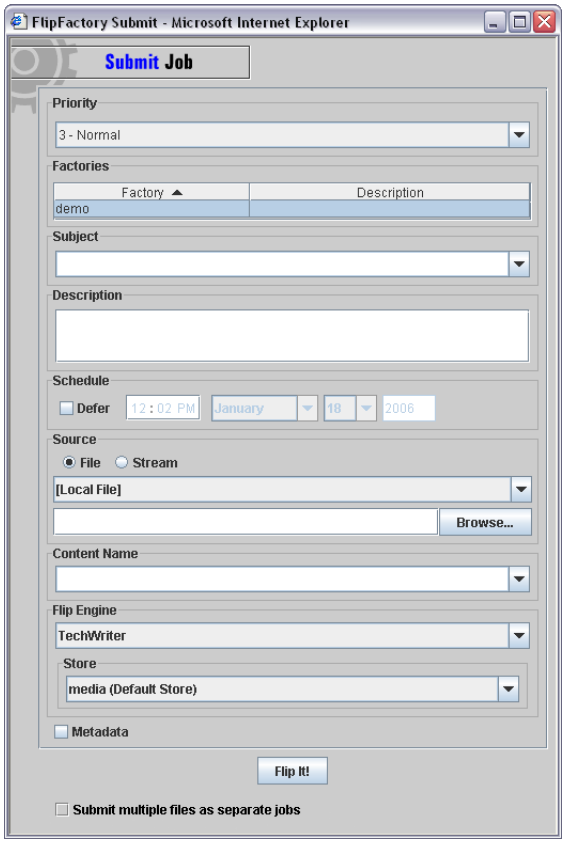
From Pipeline .You can submit Pipeline media to FlipFactory for processing in three ways. Your choice depends on your workflow requirements and the FlipFactory version you're using:

- Submit Pipeline jobs via an EDL Monitor
- Submit streaming media in real-time via the Pipeline Capture Editor
- Submit TIFO files (created via Pipeline Direct) manually or via a monitor.
- For complete details on using Pipeline in FlipFactory workflows, see the Pipeline User's Guide.

SUBMITTING A JOB MANUALLY

To submit a job manually, you identify the file (and its location), then (when logged in to the FlipFactory console), click Submit Job to display the Submit Job window:

Figure 6–1. Sample Submit Job window



You configure your job, and click Flip It! at the bottom of the window. Complete details follow.

Make selections or enter values for each field or control:

Priority of Submitted Jobs (required). Select the job submission priority (1 - 4). When the FlipEngine accepts another job from the job queue, it selects the job to process next, based on its job priority.

Factories (required). Select a factory from the Factories list. To select more than one factory, use the Control or Shift key. The account you used to log in determines the factories you can submit to – only those created in this account.

Subject (required). Type the subject for this job (required). This information is included in the notification email sent to the account owner and displayed with the job entry in the Job Status window.

Description (optional). Type a Description. This information is also included in the notification email sent to the account owner and displayed with the job entry in the Job Status window.

Schedule (optional). Leave Defer unchecked to process this job immediately upon submission. To delay processing, click to select Defer. Enter the time, and select the month and date and year. When you submit a deferred job, FlipFactory accepts the job and stores it in the database for later processing at the time you specify.

Source (required). Click File or Stream, and select the type of server where the source media is located from the dropdown menu. Custom sources are listed first (in blue), and system sources are displayed next. Both custom and system sources are listed alphabetically.

This selection is saved, and displayed as the default selection the next time you display the Submit Job window.

Now, enter a full path and file name (to override any default folder displayed below), enter a partial path and file name (to complete the default folder displayed below) or enter the file name itself when located directly in the default folder displayed below.

The remaining fields in the Source section are dependent on the type of File or Stream source you choose.

Note

You should not select Local File when submitting a job to a FlipFactory in a FlipFactory group/array. Local files by definition are only accessible by the FlipEngine where the folder resides, so any other FlipEngine that receives the job for processing will not be able to access the media in a local folder.

Using the Domain/Workgroup and Default Folder. For sources that display a Domain/Workgroup and Default Folder, you can enter the domain, then browse to a server and select a share or other publicly-accessible directory.

Click Save and name this source (*Mars_CaptureMedia*, for example).

Now, when selecting the source file, you can just enter the file name or partial path and file name – FlipFactory will concatenate this value with the default path you've selected and submit the file.

Saving and Deleting Sources. For sources other than Local File, you can define a source, connection, and login details, then name and save it for use later. These icons display *only* when Local File is *not* selected:

Delete a Source – Click to delete the custom source you selected (created earlier by you).

Save – Click to save a custom source and its details.

FlipFactory displays this window:

Figure 6–2. Save Custom Source dialog

Enter the name of the custom source and click OK.

Now, when you display the source list, your custom sources are displayed for easy selection.

Supported Media Sources

FlipFactory supports the ability to ingest and decode file-based media of these file types and/or from these sources:

Table 6–1. File Media Sources

■ Abekas Server	■ Network File (Copy)
■ Adstream Catch Server	■ Network File (Samba)
■ Akamai StreamOS/AMD	■ Omneon Director
■ BML Server (SeaChange)	■ On The Spot Catch Server
■ Centaur Catch Server	■ Open Media Framework
■ ClipMail Pro/Express	■ Quantel Server (ISA Gateway
■ DG Systems	■ QuickTime Reference Movie
■ e-VTR Server	■ Reuters Network Folder
■ FastChannel Server	■ SeaChange BML
■ Flash 8 (VP6)	■ SeaChange BMS/BMC
■ FTP Server	■ SFTP Server
■ GV K2	■ SmartJog Gateway
■ GV Profile	■ Sony MAV70 Server
■ GV Profile PDR/XP/MAN	■ Spottraffic Catch Server
■ Leitch WANStreamer	■ Stitch Multiple Files
■ Liquid Network File	■ TIFO Files from Pipeline
■ Local File (Copy)	■ Vortex Network File
■ Media DVX	■ Vyvx Catch Server
■ MediaStream	■ Web Server
■ Mijo Database Server	■ XDCAM Server
ISCI/House ID / File	
■ Network File	

Table 6–2. Streaming Media Sources

■ Autodesk Stone	■ Leitch VR
■ Cineon/DPX Profile	■ OMF Decoder
■ ClipMail Pro/Express	■ Pipeline
■ GV Profile	■ Sony MAV70 SXF Reader

Note

Stream sources do not localize media to the FlipFactory server. These source files are opened directly and segments are read and processed. In most cases this significantly reduces time job processing time, but it may require changes to Windows access & authentication settings.

Source Name (Browse). Enter the fully-qualified path and name of the input file or streaming media name or click Browse to locate and select it. When browsing a server, you can click the Details icon (far right) to view details, and sort the file names in ascending or descending order.

You can manually enter a fully-qualified path, then click Browse to jump to the target directory.

To submit more than one media file when browsing, use shift-click or control-click. When more than one file is selected or entered manually, the string must be enclosed in double quotes, separated by a single space.

Content Name. Type the name of the encoded media output file. If left empty, the name of the output file is the same as the input file.

When Stitch Multiple Files is selected for the source, the file is named Stitched_<Content_Name> if present, or Stitched_<First_Clip_Name> when left empty.

If the suffix is not specified, the suffix is provided, based on the media format/product you choose. For example, if you enter `Flipper` and encode the file as Windows Media Format, the resulting file is named *Flipper.wmv*. The destination is specified in the Destinations folder of the factory to which the job is submitted.

FlipEngine. When using a load balance group or FactoryArray, in the popup list select Any Available or select a specific FlipEngine to process this job (see FactoryArray User's Guide).

Store. Select a localization store (Adding Custom Stores (page 7-18)).

Metadata. To include metadata labels, click Metadata to check the option. Click the tab corresponding to the label you want to use and complete the fields in the editor panel. The available labels are

determined by the source type, filters, and notifications specified in the factory to which the job is being submitted.

Submit Multiple Files as Separate Jobs. When unchecked, a single job is submitted even if you have selected multiple input files. When checked, a separate job is submitted; one for each file selected.

Submit separate jobs for each input file selected to create a separate status message for each job. If an input file fails, only the failed job is recovered; if all input files are in a single job, the entire set of files is recovered even though only one failed. If this FlipFactory is part of a load balance group or FactoryArray, separate jobs are delivered to other FlipFactories for processing, speeding throughput.

Flip It!

Click Flip It! To submit the job for processing.

In addition to the metadata available within each product, FlipFactory allows you to provide additional labels for the job. FlipFactory labels are activated when a corresponding Factory filter, process/analyze tool, destination, or notification is enabled which can utilize the metadata.

STITCHING MULTIPLE FILES

File Stitching is an optional, licensed option for FlipFactory.

File Stitching is available when manually submitting jobs for processing, via the Manual Submit window.

When you select Stitch Multiple Files as the file source, you can select and open multiple QuickTime-compatible files, select in/out points in each of them, and submit them as a single job to be stitched together into a single output file, using QuickTime. FlipFactory processes each file in turn, and creates a single output file from the segments.

FlipFactory does not support stitching files with different source media types, frame rates, or frame sizes.

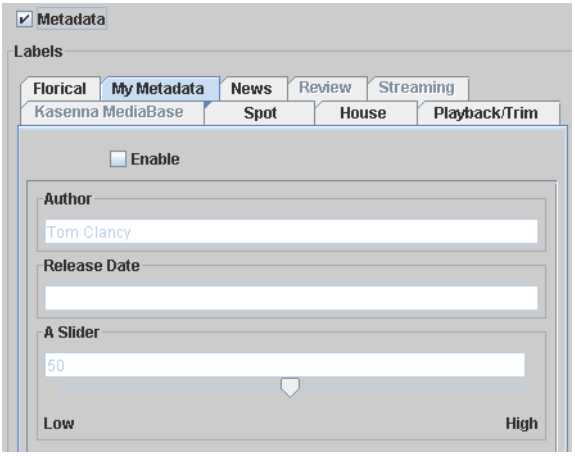
For details on using stitching in FlipFactory, see the Stitching Multiple Files app note, available on the Telestream Web site.

Metadata Labels

FlipFactory provides default label sets for:

When you enable a specific label, FlipFactory activates the metadata editor panel for this metadata label, as shown in the sample below:

Figure 6–3. Enable Metadata to display labels in editor panel



House Label Set

The House label set is available when the selected factory specifies a commercial (spot) catch server monitor (DG Systems, Vyvx, etc.), or an automation notification is enabled. The monitor matches the ISCI code of the job with the House ID and updates the House Number metadata tag.

Table 6–3. House Label Parameters

Parameter	Description
House Number	Unique House Identifier.

Playback/Trim Label Set

The Playback/Trim label set is used to gather Start and Stop times for clips. A frame-accurate proxy editor is included in order to assist the user in obtaining these times.

Table 6–4. Playback/Trim Label Parameters

Parameter	Description
Start Time (inclusive)	The new beginning of the clip (HH:MM:SS:FF), plus FPS designation.
End Time (inclusive)	The new end of the clip (H:MM:SS:FF), plus FPS designation.

Review Label Set

The Review label set is available when the selected factory includes a commercial (spot) catch server monitor (DG Systems, Vyvx, etc.). This data is intended to be passed to automation systems.

Table 6–5. Review Label Parameters

Parameter	Description
Enabled	Check to enable Review label set
Reviewed by	Name of reviewer
Date	Date of reviewed
Review Status	Accepted | Rejected
Reason	If rejected a description for the rejection

Spot Label Set

Spot metadata may be used for short form commercial spots for on-air broadcast. It is generally delivered to Traffic and Automation systems.

Table 6–6. Commercial Label Parameters

Parameter	Description
Work Order House ID	Internal reference number for the commercial or spot
ISCI Code	International unique reference identifier
Client	Name of client, up to 256 characters
Agency	Name of agency, up to 256 characters

Table 6–6. Commercial Label Parameters

Parameter	Description
Product Name/Info	Name of product or other information, up to 256 characters
Duration	Clip length in time (HH:MM:SS.999) or frames (integer).

Streaming Label Set

The Streaming label set is used with Windows Media and Real Networks.

Table 6–7. Streaming Label Parameters

Parameter	Description
Author	Name of author, up to 256 characters
Title	Name of title, up to 256 characters
Abstract	Abstract information, up to 256 characters
Copyright	Copyright information, up to 256 characters
Rating	Rating, up to 256 characters
More info URL	Fully-qualified URL pointing to more information, up to 256 characters

Timecode Label Set

Timecode metadata label is passed through when it is detected at the source.

Table 6–8. Timecode Label Parameters

Parameter	Description
Time Code	Time code entry for inclusion in Digital Daily Web page. Format: HH:MM:SS:FF or HH:MM:SS.999 (thousands of seconds)
FPS	Select frames per second

Florical Label Set

The Florical metadata label is not intended for manual UUID entry. This metadata label is updated when FlipFactory notifies Florical of a submitted job destined for a Florical server. The Florical system returns a UUID, which is passed through and returned to Florical when the media is delivered.

News Label Set

When a Pathfire notification is enabled, an AIF file can be populated with the values in the News metadata label set.

Table 6–9. News Label Parameters

Parameter	Description
Story Identifier	Text value
Title/Slug	Text value
Agency	Text value
Created Date	Text value
Synopsis	Text value
Script	Text value
Categories	Text value

Kasenna MediaBase Label Set

The Kasenna MediaBase label set displays when Kasenna is selected as a destination. It is used as a message between FlipFactory and Kasenna, and not intended for manual data entry.

SUBMITTING A JOB VIA CLIPMAIL

You can submit a job to a FlipFactory server from any ClipMail appliance. To submit the job, you must know the domain name of the FlipFactory server that contains the factory you're submitting the job to. If you don't know the domain name of the FlipFactory server, obtain it from your network administrator.

Video clips on a ClipMail may be sent to FlipFactory in several ways:

- Save the clip to your local hard drive
- Send the clip to an FTP server
- Send the clip directly to FlipFactory via SendMail.

For details about submitting a job to FlipFactory from a ClipMail appliance, see the ClipMail User's Guide.

Note

When sending from ClipMail to FlipFactory you need these parameters to build a FlipFactory address on the ClipMail:

Account Name–Name of account that owns the factory
Factory Name–Name of factory you're submitting the media to
SMTP Server –FlipFactory SMTP server domain name. (Displayed in System Settings of console)
IP address of FlipFactory server–The IP address of server where FlipFactory is running.

SUBMITTING A JOB FROM EMAIL

You may submit a FlipFactory job via email to a specific account on a FlipFactory server where you've created a factory with a Email monitor. FlipFactory provides an automatic Email monitor to accept Email jobs. To send FlipFactory a job via email, follow these steps:

Step 1 In your email application open a new email window.

Step 2 In the To field, enter the factory's email address in factory.account@domain format, for example: *sportsfactory.international@SportsFactory.acmenews.com* where:

Factory. The name of the factory that is processing the media.

Account. The account where your factory is located.

Domain. The name of the FlipFactory server and the domain network of the FlipFactory server. The domain must resolve to the IP address of the FlipFactory server.

Step 3 Attach the media file to the email.

Step 4 Click Send to submit the job.

SUBMITTING A JOB VIA A MONITOR

FlipFactory provides monitor templates that you can enable and configure (including the target location to monitor) to submit a job automatically and immediately when the input file for the job is completely stored in the target directory.

For example, you can set up a monitor to continually poll a specific path on a network file server. Then, you can drag and drop an input media file onto the folder that is being monitored by FlipFactory.

When FlipFactory detects the arrival of new media in the target location, the factory that is responsible for monitoring the file server initiates an automatic job: localizing, transcoding and delivering the output media without manual intervention

SUBMITTING JOBS FROM PIPELINE

You can stream media from a Pipeline directly into FlipFactory. Pipeline can be configured to encode SDI into MPEG2, DV25 or IM 30/40/50 for real-time streaming via RTP. You can either use an EDL to control the media stream clip by clip or you can crash record the streaming media.

Note

See the Pipeline User's Guide for details on submitting media from Pipeline to FlipFactory and for submitting TIFO files to FlipFactory.

Factories designed to process media from Pipelines *must have* at least one transcoding product. In addition to the one required product, you can also add another product to create a TIFO file (use the Duplicate Original product) as an archive/intermediate file, in a single streaming session.

You can also submit TIFO files as input to factories for transcoding to other formats and essences. When you submit a TIFO file to a factory for processing, FlipFactory can open and begin processing the file in real time if it is in the process of being written.

Submit Pipeline Jobs via EDL Monitor

You can add an EDL monitor to a factory, then use the Pipeline Control application's Live panel to control the VTR, make in/out marks, and add them to the EDL. When you're done, you save the EDL file in the EDL Monitor folder – the target of the EDL monitor.

When the EDL is saved, FlipFactory submits one or more Pipeline jobs. Each job is submitted by processing each entry in the EDL on the Pipeline and its associated VTR to produce a stream from the selected Pipeline

encoder. FlipFactory transcodes the stream in near real-time, based on your FlipFactory factory's Product settings.

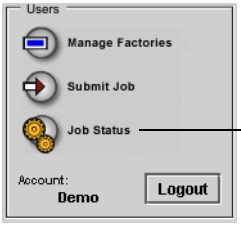
Crash Record Media

You can also configure FlipFactory without an EDL monitor to crash record streaming media. To crash record streaming media from the Pipeline, you use the Manual Submit panel to submit a job. On the Manual Submit panel, select Pipeline from the stream source and select the target Pipeline which is streaming live data.

VIEWING JOB STATUS

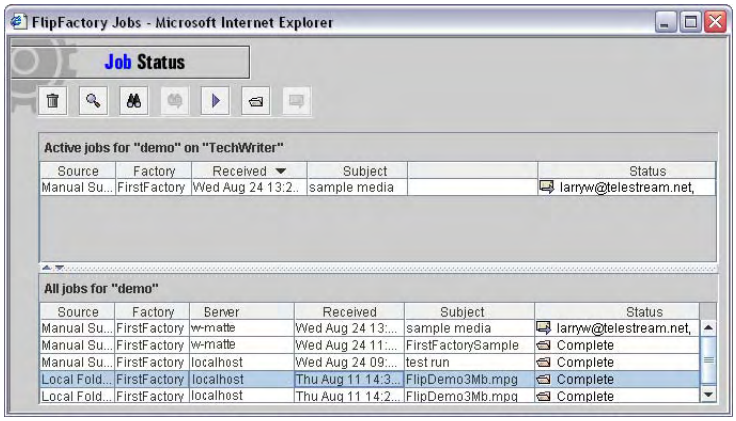
To view jobs submitted to each factory in your account, launch the console and log on to your account. In the User's panel on the console, click Job Status.

Figure 6–4. Click Job Status to display Job Status window



FlipFactory displays the Job Status window.

Figure 6–5. Job Status window displays active & complete jobs



In the top panel, FlipFactory displays active and scheduled jobs; in the bottom panel, FlipFactory displays all of the jobs in your account.

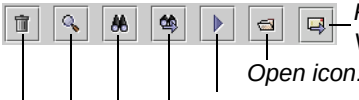
For each entry, details include the source of the job (a monitor or manual submission), the factory which processed it, the server on which the job ran, a receipt date/time stamp, the subject (if one was entered), and status messages.

Select a job to view details, and optionally, operate on it.

Toolbar Commands

The Job Status window displays a toolbar for convenient access to common job commands:

Figure 6–6. Toolbar in Job Status window



Resubmit/Forward icon: Display Message Viewer window for job.

Open icon: Display details about the selected job.

Preview icon: Play the media (Req's URL of playable media).

Repeat Find icon: Repeat search of previously located term.

Find icon: Search for terms in the subject field of a job.

History/Status icon: Display the status or history of selected job.

Delete icon: Delete the selected job.

Note

When a toolbar icon is appropriate to use (save, for example, when you make a change to the account), it is activated. Otherwise, it is disabled and displays in gray.

Deleting a Job

You can delete any job that has not yet started, is being flipped, or is complete. Jobs in other states may not be deleted until they are complete.

Step 1 To delete a job, select the job and click the Delete icon.

Step 2 FlipFactory displays a confirmation dialog.

Step 3 Click Yes to permanently remove the job or No to cancel.

Note

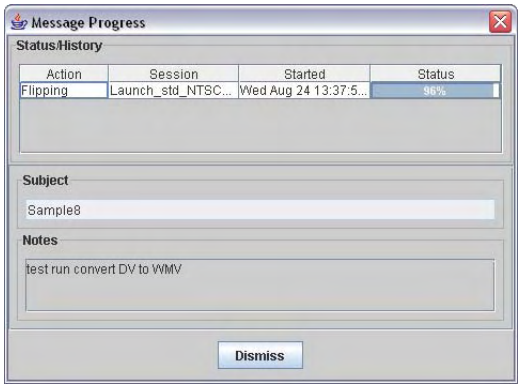
To select multiple jobs, press the shift key to make a contiguous selection; press the control key to make a non-contiguous selection of jobs.

Displaying Job History/Status

To display the status of a job in progress or the history of a complete job, select the job in either panel and click the History/Status icon (2nd from left – hover to view name) in the toolbar.

FlipFactory displays the Message Progress window and displays each action in the selected job.

Figure 6–7. History/Status Window of job in process



When you display the job status of a job in progress, FlipFactory displays each action, the session or action information, start time and status, sorted by the start time. If an action contains no sessions, just the action is displayed as an entry. If an action has one or more session, each session is displayed.

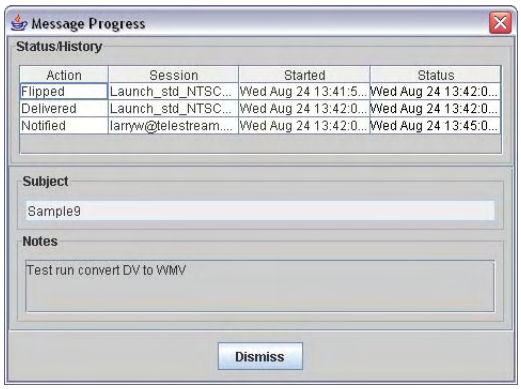
If a job is scheduled for future processing, no actions are displayed.

Note

To display the status of a job, double-click it in the All Jobs panel of the Job Status window or select it and click the Job Details icon in the toolbar.

If you select a completed job, FlipFactory provides similar information.

Figure 6–8. History/Status Window of complete job

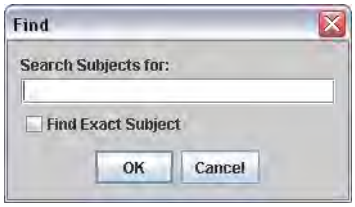


When you display the job status of a complete job, FlipFactory displays each action, the session information, start time, and the complete time in the status column.

Finding Jobs by Subject

To locate a job listed in the All Jobs (lower) panel of the Job Status window by searching the subject fields, click the Find icon in the toolbar. FlipFactory displays a Find window.

Figure 6–9. Use Find dialog to search for jobs by subject



Enter the text you want to search for and click OK. (To find an exact match, check the Find Exact Subject checkbox.) FlipFactory begins at the top of the list and searches. If FlipFactory finds a match, it is highlighted; if not, FlipFactory advises you via a dialog. Once you have found a match, the Repeat Find icon (to the right of the Find icon) is activated. Click it to repeat your search downward through the list.

Playing a Proxy File

Proxy files are media files that are playable on your computer.

Note

You can play MPEG2 files in Windows Media Player when you run it directly on your FlipFactory server, because FlipFactory installs the required plug-in.

For a specific media file to be playable, you must have the following:

- You must have a suitable media player (Windows Media Player, QuickTime Player, Real Player, etc.)
- The MIME types must be set correctly in your Web browser
- There must be a URL or UNC to point to the target Web folder (automatic or manual).
- The target server must have an HTTP (Web) server to respond to the HTTP request.

When you click the Preview button on the Job Status or Job Details window, FlipFactory attempts to find a specific type of media to play, in a specific order:

1. The version with the specified suffix, if present
2. The original version of the media
3. the duplicate version of the media
4. The first playable version that doesn't meet the previous criteria.

To specify a file type (by suffix) that FlipFactory should play first, see "Modifying the Default Preview File Type" on page 7–30.

Destinations with Alias Parameters

Many FlipFactory destinations provide the ability to enter a URL or UNC, including Web and WebDAV destinations, and local files, and FTP servers. For specific details, see the help page on the Destinations enabler panel in the Manage Factories window.

Playing Media

To play the proxy media file, select the completed job and click the Preview icon in the Job Status window or the Job Details (Message Viewer) window. FlipFactory locates the media via its URL, and plays the media in an appropriate player – Windows Media Player, QuickTime Player, Web page with plug-in, etc.

Proxy files are often sent to a Web Server (Local) destination, stored (by default) in *C:\Program Files\Telestream\FlipFactory\http\Media*, and are served by FlipFactory's Web server when you play them. The Web Server (Local) destination automatically creates the URL and stores it for use when you click Play.

You can also send media to other destinations, including FTP servers, local files, and others. In each case, you must provide a valid URL or UNC in the Alias URL/UNC field of the destination:

http://localhost:9000/media, where *localhost* is the FlipFactory built-in Web server, port *9000* is the default HTTP port for TCP traffic, and *media* is the default target directory (which resolves to Program Files/Telestream/FlipFactory/http/Media folder), because the Program Files/Telestream/FlipFactory/http path is the root path for the FlipFactory built-in Web server.

You can also substitute the name or IP address of the server (*MyFlipServer* or *168.192.10.10*, for example), in place of *localhost*.

Note

You can not play a media file from FlipFactory unless the path is an HTTP path (by using the Web Server (Local) destination).

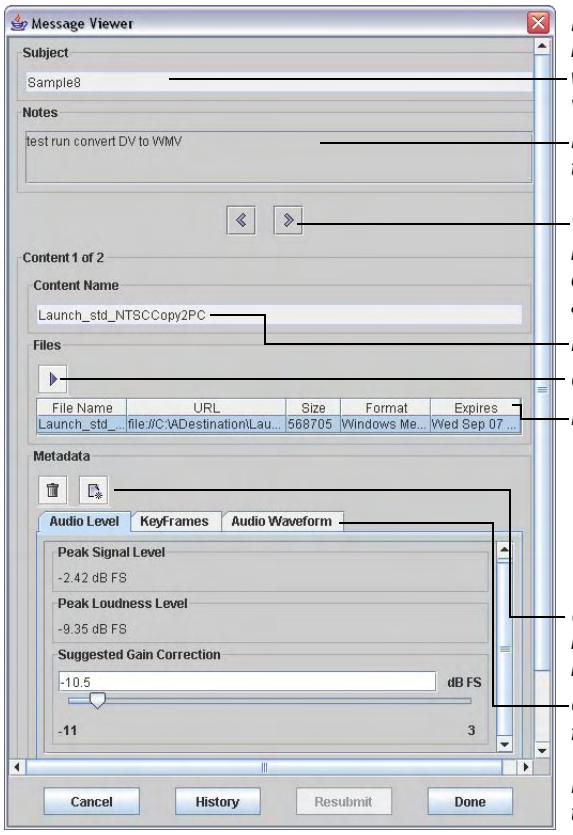
Typically, proxy files are low-res files encoded in typical computer-viewable sizes and formats, created in WMV, QuickTime, or Real format.

Viewing Job Details

To view details about a job, double-click the job in the All Jobs panel or select it and click the Open icon in the toolbar.

FlipFactory displays the Message Viewer window and displays information for the selected job.

Figure 6–10. Job details in Message Viewer window



File name if submitted by monitor; value of Subject field when submitted manually or via ClipMail.

Description text (manual) and task execution results.

When displayed, arrows indicate multiple content or output media files. Click to view and update.

Name of output media file.

Click here to play proxy files.

Proxy Files Table:
File Name. Full name of file
URL: Location of file
Size: Total file size, in bytes
Format: Proxy format
Expires: Media expiration date

Use Delete and New icons to remove or create Metadata labels.

Click Tabs to display metadata for a specific label.

Buttons allow you to operate on this job.

Use this window to view the details about this job, modify or add metadata, and resubmit the job.

Commands in the Job Details Window

Use these buttons at the bottom of the window (<HT_Blue>Figure 6–10) to operate on this job record:

Cancel. Click to close this window without updating the job record in the FlipFactory database.

History. Click to display the current status or history in the Message Progress window. For details, see Displaying Job History/Status on page 6-17.

Resubmit. When a job from a factory has a product with Use this Product for Resubmit/Forward checked (Creating a Product –Naming and Specifying Media Format (page 5-25)), or the factory has a Duplicate Original product, and the file has been delivered to local storage, Resubmit is activated. Click Resubmit to display the Resubmit/Forward

window, update job details and submit this job to the same factory or forward it to another account and factory based on your destination settings.

Update the details and click Submit. For details, see Resubmitting a Job on page 6-27.

Done. Click to update the job record in the FlipFactory database and close the window.

Viewing and Updating Job Details

If you plan to resubmit or forward this job, you can update fields in this window and click Resubmit.

Subject. The value in the Subject field is the subject name entered in the Submit Job window when submitted manually (or via ClipMail), or the file name when the job was submitted via a monitor.

Notes. The Notes field contains the Description text when the job is submitted manually, plus notes from the factory as it executes each step. If the job was submitted automatically via a monitor, the field does not display.

Content Panel

Content. Displays the name of the output media, and the files associated with the content. If there is more than one output media in a job, left and right arrows are displayed directly above the Content area. Use the arrows to scroll through and view the details of the content.

Content Name. This is the name of the output media file.

Files. Displays a list of files that have been produced, and details about each file, including the location, size, format and expiration date. To play a proxy file, select the file and click the Play icon above the table; or double-click the file itself.

Right arrow. Select a job, and click this icon to play the proxy file.

Metadata Panel – Adding and Updating Metadata

Use the Metadata panel to create new metadata labels, and view and update metadata for this job. FlipFactory includes all Metadata automatically gathered or manually inserted into this job. FlipFactory can obtain metadata from edge servers including Vyvx, and DGSystems. It also produces metadata by analyzing the media for audio levels, closed caption data, and thumb nail key frame images, for example.

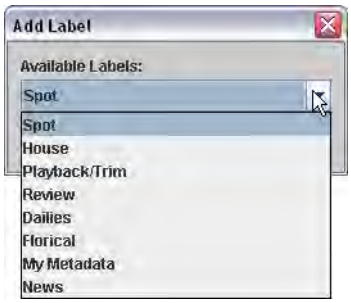
FlipFactory also includes a frame-accurate playback editor for extracting the Start of Media and End of Media, and a Commercial metadata tab for collecting information to pass onto Operations and Automation systems. When using the playback editor with QuickTime files, you should save them in the Local Storage (FlipFactory store) destination, and provide the server and share in Windows format. For example: *\\FlipServer\Media*,

where *FlipServer* is the name of the server, and *Media* is the folder, which is the target of the store you selected and must be shared.

Delete Icon. To delete a metadata label, select the tab and click the Delete icon. FlipFactory displays the Confirm dialog. Click Yes to permanently remove the selected metadata label and its associated metadata from the file or click **No** to stop the action.

New Icon. To create a new metadata label and supply information for this file, click New. FlipFactory displays the Add Label window.

Figure 6–11. Add Label window adds a new metadata label



Select the metadata label from the dropdown menu and click OK. FlipFactory displays a new tab for the selected metadata label. Fill in each field and select options for this metadata.

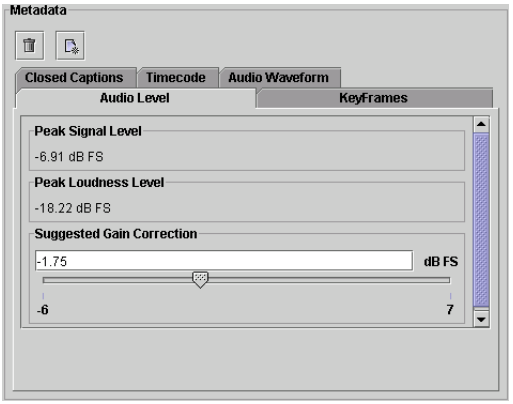
Metadata Editor Panels

Click the tab to display metadata from the processed media. For each process/analyze tool you enable, FlipFactory performs the analysis, generates the metadata and displays in these metadata tabs.

Audio Level Metadata

This tab is active when you process a job through a factory where the Audio Level Analysis tool has been enabled. Click the tab to view the metadata generated by FlipFactory for this metadata.

Figure 6–12. Audio level Metadata Editor panel



The results of this analysis include the peak signal level, peak loudness level, and suggested gain correction. The gain correction value is forwarded to an Operation account that contains an Audio filter with Auto levels enabled.

Keyframes Metadata

The Keyframes Metadata tab is active when you process a job through a factory where the Keyframes Extraction tool has been enabled. Click the tab to view the metadata generated by FlipFactory for this metadata.

Figure 6–13. Keyframes Metadata panel

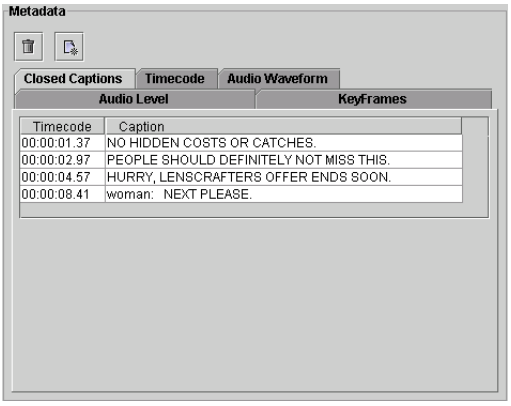
The frequency of thumbnails may be adjusted down to the frame level.

The Video Analysis process/analyze tool produce key frames for review – a separate Keyframe codec allows you to set up and extract JPEG files in a folder for use separately.

Closed Caption Metadata

This tab is active when you process a media file that contains closed caption content and the factory processing the job has the Vertical Blanking process tool enabled. Click the tab to view the metadata generated by FlipFactory for this metadata.

Figure 6–14. Closed caption decoder Metadata Editor panel

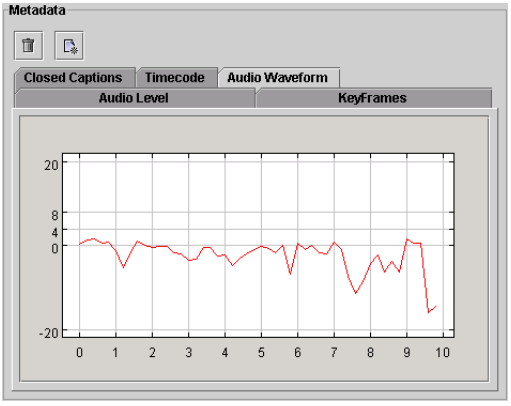


FlipFactory displays a table with each time code and text caption in the media listed in ascending order.

Audio Waveform Metadata

This tab is active when you process a job in a factory that has the Audio Analysis process tool enabled and Create Waveform Display checked. Click the tab to view the audio waveform metadata generated by FlipFactory.

Figure 6–15. Audio waveform panel

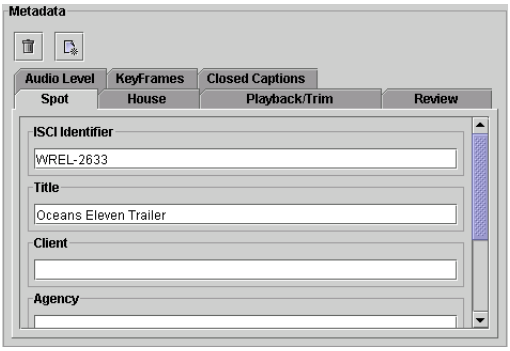


Use the Audio Waveform graph to view and validate the audio level parameters, and make adjustments as necessary.

Spot Metadata

This tab is active when you process a job through a factory that receives the source media from a commercial (spot) catch server. Click the tab to view the metadata generated by the catch server.

Figure 6–16. Spot Metadata Editor panel



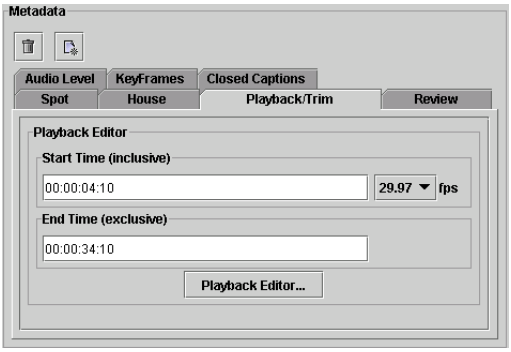
The Spot tab includes metadata from edge server databases or entered manually. Values are Work Order/House Number, ISCI code, Title, Client, Agency, Product Name/Info and Duration.

Playback Metadata

This tab is active when this job has processed media from a catch server monitor or when you are using a factory with media trimming enabled.

Click the tab to view the metadata generated by the catch server.

Figure 6–17. Playback/Trim Metadata Editor panel



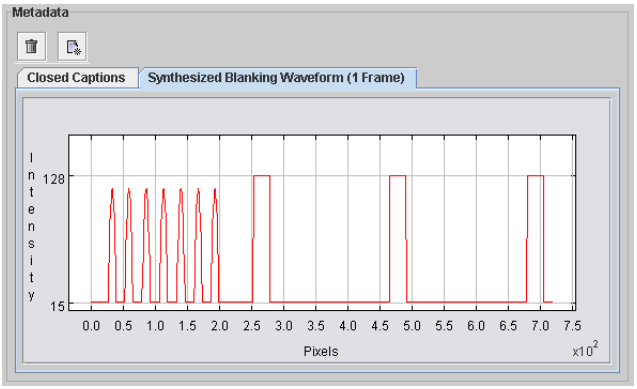
Playback may be used to obtain the SOM and EOM for the media. These values may be entered via the Playback editor or manually, in frame or time mode. For details about using the Playback Editor, see the TrafficManager Users' Guide.

In certain circumstances, the Playback Editor button may not display, or when clicked, QuickTime may display an error. For details, see Playback/Trim Editor in Troubleshooting (page A-1).

Vertical Blanking Synthesis

This tab is active when you process a media file that contains closed caption content and the factory processing the job has the Vertical Blanking Synthesis tool enabled. Click the tab to view the graph of the first two bytes in the first frame synthesized by FlipFactory.

Figure 6–18. Synthesized blanking Waveform panel



FlipFactory displays a table with each time code and text caption in the media listed in ascending order.

Resubmitting a Job

Click Resubmit to submit a job to the same factory or to another factory for processing again. FlipFactory displays the Resubmit/Forward window.

You can resubmit or forward jobs in this manner when the job is from a factory which has a product with Use this Product for Resubmit/Forward checked (Creating a Product –Naming and Specifying Media Format (page 5-25)) or the factory has a Duplicate Original product, and the file has been delivered to local storage.

Click Resubmit to display the Resubmit/Forward window, update job details and submit this job to the same factory or forward it to another account and factory based on your destination settings.

Note

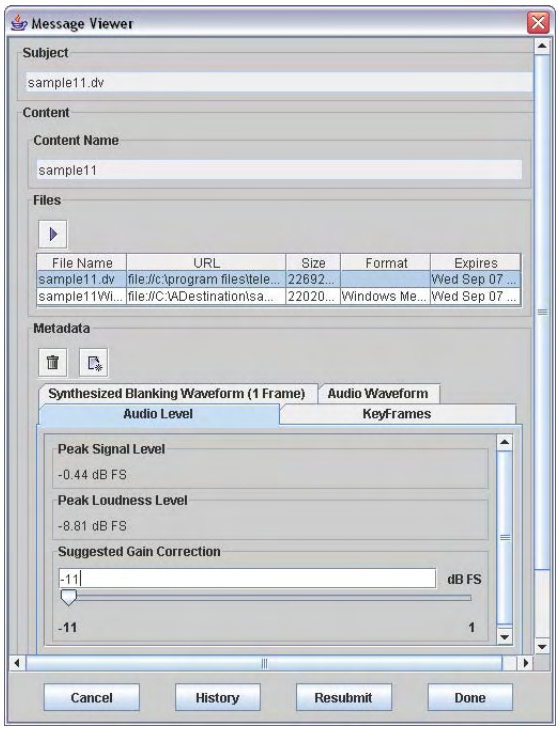
FlipFactory's Resubmit/Forward job feature is an important, customized workflow enabler. You can set up accounts and jobs to permit operator intervention, validating and adding metadata and submitting for final processing, etc.

TrafficManager, for example, enables workflow processes between operations and traffic departments to process incoming spots through to on air servers with a resubmit process.

GraphicsFactory also utilizes the resubmit process to allow operators to add variable data to GraphicsFactory jobs being submitted via a GraphicsFactory Template which requires run-time information for generation of graphics overlay clips.

For details on workflow configuration and operation in TrafficManager or GraphicsFactory, see their user guides.

Figure 6–19. Message Viewer window for resubmitting a job



The Message Viewer window displays each of the fields, panels and functionality of the Job Details window described in the Job Details section (Viewing Job Details (page 6-21)). When resubmitting a job, you may select a new account and factory.

Commands in the Message Viewer Window

Use these buttons to operate on this job record:

Cancel. Click to close this window without updating the job record in the FlipFactory database.

History. Click to display the current status or history in the Message Progress window. For details, see Displaying Job History/Status (page 6-17).

Submit. Click to submit this job to another factory. FlipFactory displays the Message Viewer window. Update the details and click Submit.

Before you submit the job, specify these options (displayed at the top of the window). Then, click Submit at the bottom of the window:

Account. Click to display a dropdown menu listing all available accounts. Scroll through the list and click to select an account.

Factory. Click to display a dropdown menu listing each factory in the selected account. Scroll through the list and click to select a factory.

Notes. Type any notes to be sent to the resubmitting account or via notification email.

Content. Type the new content name for this clip. If you do not enter a name, the clip name defaults to the name of the input file (numeric suffixes are appended to duplicate file names).

Files. This section includes the formatted files to be generated from the factory. For example, you may specify the original MPEG2 file is sent to an Archive folder, a frame-accurate MPEG1 proxy to a Web server and a low-resolution Windows Media viewing proxy to the media store – FlipFactory's Web server.

Note

The expiration date specifies when this file is automatically deleted from the server.

Click Submit to send this job to the selected factory for processing.

CHAPTER 7

Customizing FlipFactory

Use this chapter to customize FlipFactory to operate efficiently in your environment.

Topics

Note

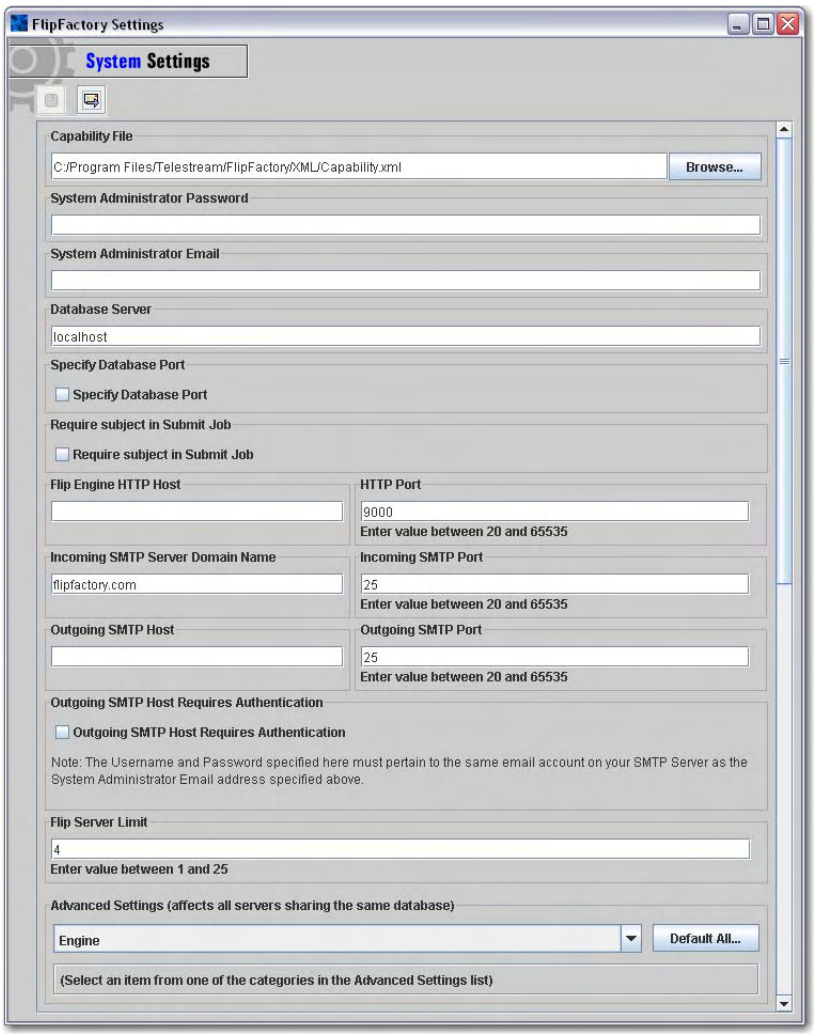
FactoryArray users should never use drive letters in stores, and always replicate FlipFactory registry settings and custom stores across all FlipFactory servers in the array or load balance group.

ADVANCED SYSTEM SETTINGS

You can customize a wide variety of options in FlipFactory (and all Flip Engines attached to a load balance group or FactoryArray) by adjusting them in the System Settings window, under Advanced System Settings.

To view these settings and make changes, click System Settings in the FlipFactory console. FlipFactory displays the System Settings window:

Figure 7–1. Use System Settings window for advanced settings



Advanced settings display at the bottom of the window, and they are organized by category. Select a category from the dropdown menu and proceed.

These settings are stored directly in the FlipFactory database instead of the Windows registry, and they are effective for a single FlipFactory or all

Flip Engines in a load balance group or FactoryArray. This significantly simplifies customization.

Note

Some Advanced System Settings may also be set in the Windows registry Registry entries take precedence over the same settings stored in the FlipFactory database.

If you plan to use Advanced System Settings, make sure you do not have registry settings that conflict on any FlipFactory server in a load balance group or FlipFactory Array.

Engine Settings

Use these setting to make changes in the categories of interrupted job recovery, database management, and delivery, monitor, and notification behavior and functionality. This detailed information is also available by clicking the Help button in the System Settings window toolbar.

Automatic FlipScan Processing

Check Automatic FlipScan processing to cause FlipFactory to populate each job with a FlipScan label. FlipScan is an optional, licensed feature of FlipFactory. For details on FlipScan and FlipScan labels, see the FlipScan Option app note, available in the FlipFactory section of the Telestream Web site (www.telestream.net).

Recover Jobs

Enter the text *on* to cause the FlipEngine attempt to restart jobs that were in process when the FlipEngine failed or stopped. These jobs remain in the database, marked as in-process. If unchecked, these jobs are ignored when FlipFactory restarts. Enter *off* to disable job recover. Enter ‘registry’ to set up the Recover Interrupted Jobs option in the registry. For details on these registry entries, contact Telestream Customer Service.

Database Settings

Automatic Account Upgrade

Check Enabled to cause FlipFactory to upgrade all accounts on startup. For large accounts, this process may take as long as 20 or 30 minutes (depending on size of course). During this time, FlipFactory will not accept jobs for processing.

The default setting is off, and Telestream recommends turning this setting off after using it to upgrade accounts.

Expiration Cycle Time

This value determines how often the purge process runs to remove expired jobs from the database.

Expiration Frequency

This value determines how old expired jobs must be before they are purged from the database.

SQL Memory Size

This value determines much RAM is dedicated to the SQL Server process for FlipFactory. The optimum size depends on the amount of jobs submitted and how long you keep them before purging.

Delivery Settings

Concurrent Deliveries Limit

This value determines how many files from completed jobs that can be in the Delivery process at any one time.

Debug XML

When set to a qualified path (*C:\Program Files\Telestream\FlipFactory\DeliveryMsg*, for example), for each delivery, the MDML Delivery Message (an XML file) is saved in this location. For details on the MDML format, see the FlipFactory SDK.

Input Queue Size

This value limits the number of completed jobs that can be put directly into the delivery queue while awaiting delivery. Default: 5. If this limit is reached, the monitor can not submit any more jobs until the number of jobs in this queue is reduced.

Localize Settings

Concurrent Localization Limit

This value limits the number of concurrent localization tasks that can execute simultaneously.

Input Queue Size

This value limits the number of file localization tasks (step 1of most jobs) that can be put into the localization queue while awaiting processing. Default: 5. If this limit is reached, delivered jobs remain in the monitor queue until the number of jobs in this queue is reduced.

Monitor Settings

Command Queue Size

This value limits the number of jobs in the Monitor input queue. This value is only used for shutdown requests and jobs with errors.

Cycle Time

This value determines how frequently jobs submitted by monitors and inserted in the database are retrieved and processed by the Flip Engine.

Debug XML

When set to a qualified path (*C:\Program Files\Telestream\FlipFactory\MonitorMsg*, for example), for each delivery, the MDML Monitor Message (an XML file) is saved in this location. For details on the MDML format, see the FlipFactory SDK.

Use House ID for Subject

Check to map the House ID to the Job Subject line, instead of using the ISCI Code (TrafficManager).

Notify Settings

Concurrent Notifications Limit

This value determines how many files from completed jobs that can be in the Notification process at any one time.

Debug XML

When set to a qualified path (*C:\Program Files\Telestream\FlipFactory\NotifyMsg*, for example), for each delivery, the MDML Monitor Message (an XML file) is saved in this location. For details on the MDML format, see the FlipFactory SDK.

Input Queue Size

This value limits the number of completed jobs that can be put directly into the Notify queue for processing. Default: 5. If this limit is reached, delivered jobs remain in the delivery queue until the number of jobs in this queue is reduced.

Remote Settings

Take Over on Shutdown

This option displays only when the FlipEngine is part of a licensed FactoryArray. To display this option, perform these steps *one* time:

Step 1 Start up Flipfactory.

Step 2 Display a Telnet window.

Step 3 After FlipFactory is up and running, type “quit” in the Telnet window and answer “y” to the question.

Step 4 Start FlipFactory again and log into the console. The Remote Setting should display.

Check this box when you want other factories in the FactoryArray to take over jobs and monitors when you shut down a FlipFactory that is part of the array. If unchecked, when you shut down the FlipFactory, any jobs unprocessed are left in the database, and monitors go offline until this FlipFactory returns to service.

Transcode Settings

Concurrent Transcodes Limit

Enter the number of concurrent jobs that can be in transcode at the same time.

Follow Flip Server Limit

When checked, FlipFactory obeys the Flip Server limits set in System settings, causing the internal transcode queue and the simultaneous job limit to both be controlled by the FlipServer limit. When unchecked, you can over ride the transcode queue size and limit.

Input Queue Size

This value limits the number of localized jobs that can be put into the queue awaiting transcoding. Default: 5. If this limit is reached, localized jobs remain in the localize queue until the number of jobs in this queue is reduced.

TUNING QUEUES|LIMITS|FLIP LIMIT FOR HIGH VOLUME SYSTEMS

This section describes the operating theory of queues, limits, and the flip limit in FlipFactory, to assist you in understanding how best to tune your advanced settings to meet your high-volume job processing needs most effectively.

Queues

FlipFactory has queues for jobs in each stage of the processing pipeline – monitor, localize, transcode, deliver, and notify. These queues are used to store jobs so that each of the processing threads in FlipFactory will take the next job with the highest priority from the stack of jobs in the previous queue and begin this phase of processing. All the stages of the pipeline can occur simultaneously; thus, for example, many localize tasks can occur at the same time as transcoding is occurring, speeding total throughput.

Potentially, however, if you have queues with large limits, a significant volume of localize task for example, could stack up waiting for transcoding, and eventually use up all available memory on the server. To limit this problem, FlipFactory limits the queue sizes to specified values. These values have been studied under performance load and defaults have been assigned. The monitor queue has a maximum size of 20, localize 5, transcode is 4, delivery 5, and notify 5.

The queue limit is not the number of activities that can happen at the same time, it just indicates the maximum number of tasks that can be available for the next process. Thus, if the transcode queue is full, it will back up into the localize queue, and back into the monitor queue, and actually eventually into the http queue, which defines how many http connections the flip engine allows.

Performance can be shaped accordingly for the most demanding edge cases. For most FlipFactory systems, these queue sizes never need to be changed. The monitor queue is stored in the database and thus does not have a hard coded limit. This means there should never be a backup problem in FlipFactory related to the queue size and console lockups due to the http limit being backed up are unlikely to occur.

Limits

Each stage also has a limit setting, which governs the number of actual simultaneous jobs which can be processed. Queues and limits interact in that a new job is taken off the queue for processing, until the limit is reached, after which no more jobs are taken from the queue until a current job completes in this phase. Adjusting the limit value to a lower number may cause the queue to back up quicker, but it will also tends to serialize jobs since there are less jobs being processed simultaneously.

Flip Limit

For the transcode stage there is one additional limit, called the *flip limit.* The flip limit value controls the number of simultaneous flip.exe's that can be run *per job*. The term *job* is an important word, in that each row in the job status window is a single job. A single job can have multiple products: therefore, a flip.exe (as displayed in the Task Manager) must be run for every product defined in a factory.

The term flip limit does not specify the maximum number of flips running at one time – thus viewed, in the Windows Task Manager simultaneously. The flip limit is actually the simultaneous job limit on a *per job* basis. If a job has multiple products and you have a transcode limit greater than 1 you can have an actual maximum equal to the transcode limit multiplied by the flip limit. For example, if you have a flip limit of 4 and a transcode limit of 4 you can have up to 16 flip.exe's running at the same time. To see this in operation, you would have to define a factory with at least 4 products and submit 20 jobs immediately, so that the flip limit could be reached for each one of those jobs.

In most cases, factories don't have are large volume of products in a given factory, so the number of flip.exe's in the Task Manager seems to hover at or near the flip limit – when in actuality, it is hovering exactly at the transcode limit. These two values follow each other (if you change the flip limit in Advance Settings, the transcode limit is also changed by default) to reduce the confusion by the seeming contradiction between the flip limit and transcode limit!

Impact

Setting the limits correctly is an important part of system tuning and one often overlooked when installing FlipFactory systems for high volume job processing. Tuning these queues effectively can make the difference between a highly functioning system and an overloaded, sluggish system.

Conclusion

Each stage in FlipFactory has a *queue* and a *limit*. The queue is the maximum number of jobs that can stack up waiting for processing

in that stage. The limit is the max number of jobs that can be processing at the same time. The transcode stage has one additional limit called the *flip limit*, which caps the number of simultaneous flip.exe's that can be run per job. Thus, the maximum number of flip.exe's is equal to: Flip Limit multiplied by Transcode Limit.

If you have questions about how to tune your FlipFactory for efficient, high-volume job processing, please contact Customer Service for assistance.

ACCESSING NETWORK RESOURCES

To properly access network resources such as network shares, video servers, catch servers and on-air servers, the FlipEngine service must be configured with the appropriate network permissions, and you must provide proper authentication credentials to access these servers.

In most cases the FlipEngine should run under an account with the appropriate read/write privileges for the required servers and systems. The use of a specific account works in a work group environment and in a domain environment (as a system account). Follow the steps below to assign a specific user account to the FlipEngine service.

Note

In some situations, certain network resources require additional authentication parameters. See Accessing Network Shares with Custom IDs (page 7-16).

You may choose to use local accounts and create shares to obtain the same operational status between servers, but the responsibility is yours to ensure that FlipFactory services have proper access to all other servers in the array, including monitor and destination systems and shares.

To configure the FlipEngine for a user account, follow these steps:

Step 1 In a workgroup environment, create a single administrative account with read/write permissions that you'll use on each FADM and FlipFactories in the array, plus each monitor and destination system.

–OR–

In a domain environment, create a single administrative account as a system account, with read/write permissions that you'll use on all FADM and FlipFactories in the array, plus each monitor and destination system.

Make sure that you log on with the same account when installing FlipFactory, and that each MS SQL and Flip Engine service is also set to log on using the specified account.

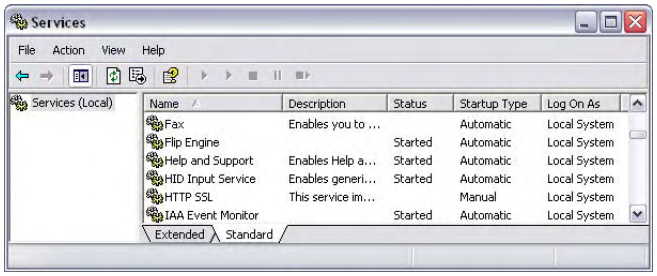
Step 2 Test for proper FlipFactory interoperability by logging on with this account and browsing to all other monitor and destination servers. Test privileges – create a directory and copy a file into it, then delete the directory.

Step 3 Make sure that you log on using this account when you install software.

Step 4 In a workgroup environment, make sure that you set up each MS SQL, and Flip Engine service to use this account:

Step 5 Open Control Panel > Administrative Tools > Services, select each service (SQL Server (FLIPINSTANCE) and Flip Engine) and right-click to display Properties.

Figure 7–2. Windows Services window



Step 6 Double-click FlipEngine service to display its property sheet.

Step 7 Select the Log On tab to specify the local system account or a specific user account for granting authority to network servers. The (default) local system account may only provide authority to access files on this server.

Figure 7–3. FlipEngine properties Log On tab

Local System Account. This is the default setting. Leave this checked *only* when the FlipEngine service does not need access to network servers or other network resources, or when the local system account has been granted access to the required network servers.

This Account. Check to select an account that the FlipEngine should use. The FlipEngine can access network resources under the auspices of

the specified user. Browse to select a specific user within the domain (or workgroup) that has proper credentials to access network resources.

Note

The specified account must have administrator privileges on the local computer and network servers. This account is utilized in the configuration of the other servers and must have administrative privileges on those servers as well.

Step 8 Enter the account to be used or click Browse to display a local or domain user list and select a user account if the FlipEngine is part of a domain. (The account name must be registered to the domain).

Step 9 Enter a password and confirm the password. Click OK to save settings.

Step 10 In the Services window, stop the FlipEngine service.

Step 11 Wait approximately 30 seconds.

Step 12 Next, click Start to restart the FlipEngine with the new settings and close the Services window.

Restart the FlipEngine service to use the new database (for details, see Stopping and Starting FlipFactory on page 6-6).

Note

If the group/array database port number has changed, or you entered it incorrectly, FlipFactory will notify you when it launches and attempts to attach to the database. You cannot log on as a user or perform administrative tasks if you are not connected to the group/array database.

When you have connected each FlipFactory to the group/array database, the FlipFactory group is ready to use.

If you create a Local Folder monitor in any factory that belongs to a FlipFactory group/array, and the FlipEngine fails, the Local Folder monitor will not be recovered.

Because jobs may be submitted to any FlipFactory in the group/array, if you manually submit jobs from a Local Folder source, they also won't be recovered.

Local folders by definition are drive-letter identifiers and are only accessible by the FlipEngine service where the folder resides.

USING THE WINDOWS REGISTRY TO CUSTOMIZE FLIPFACTORY

FlipFactory uses the Windows Registry to customize FlipFactory, and these settings are created and updated using the Registry Editor. Windows Registry settings affect only the Flip Engine on the server where the registry setting is entered. If you have a load balance group or FactoryArray, you should make the same entry on all servers in the group.

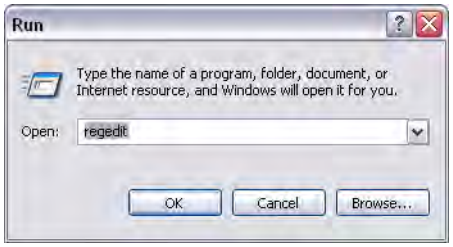
Caution

Editing the registry incorrectly may cause FlipFactory to fail, or your server to stop operating correctly. Back up your registry so you can restore it if you make an error. If you are unsure of how to back up the registry or perform editing correctly, check with your system administrator.

Using the Registry Editor

To use the Registry Editor to make FlipFactory registry entries, click Start > Run to display the Run window.

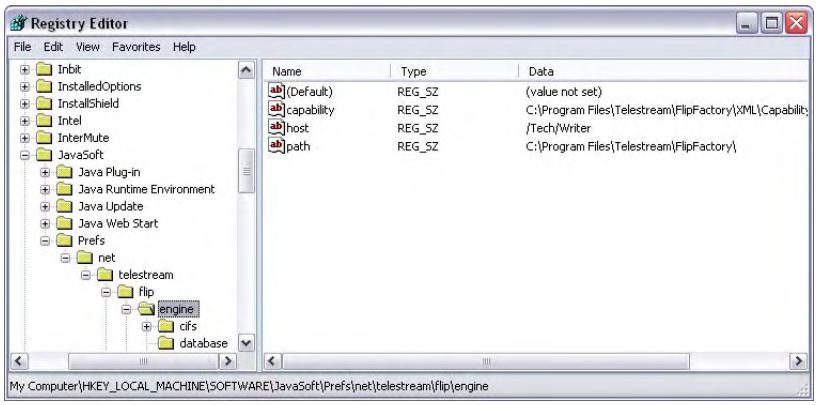
Figure 7–4. Use Run window (start > Run) to launch Regedit



Type `regedit` and click OK.

Windows displays the Registry Editor window.

Figure 7–5. Typical Registry Editor window



The Registry Editor is an Explorer-style window. The directory of keys is displayed in the left panel; the values and their data for the selected key are displayed in the right panel.

To create a key entry, right-click in the editor panel to display the New menu, and select Key from the dropdown menu. To create a Value in a key, select the target key, then right-click and select New > Value of the type you want (usually *String*) from the context menu.

To edit the data in a Value, double-click the Value (or right-click it and select Modify). Use the editor window to name it and provide the appropriate data for your system.

For more information on using the Registry Editor, see your Windows operating system manual or the Microsoft Web site.

Each time you make changes to the FlipFactory registry entries, you must make sure everyone is logged off, and stop and restart the FlipEngine service for the changes to take effect (for details, see Stopping and Starting FlipFactory on page 6-6).

CHANGING THE MEDIA STORAGE EXPIRATION PERIOD

FlipFactory by default maintains input and output media files processed by jobs that complete normally, in a store, for 14 days before erasing them. To change the duration of files in a store, follow these steps:

Step 1 Launch the Windows Registry Editor (page –12).

Step 2 Open the default media folder key in this path: HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\stores\media (or other stores key created).

Step 3 Right-click the *expires* value. Select Modify to display the expiration day value (default 14). Permitted values include 0 (to expire immediately), and decimal values: 0.25, for example, causes files to expire in 6 hours.

Step 4 Enter the new expiration period.

Step 5 Close the Registry Editor to save the changes.

Note

The example shown here illustrates how you change the expiration date for media files in the default store. For details, see Adding Custom Stores on page 7-18 to create new stores.

Step 6 Restart the FlipEngine to select the new expiration limit (for details, see Stopping and Starting FlipFactory on page 6-6).

CHANGING FAILED JOBS MEDIA STORAGE EXPIRATION PERIOD

When a job fails, FlipFactory also maintains media files in a store for 14 days. To change the duration of files from a failed job, follow these steps:

Step 1 Launch the Windows Registry Editor and open the default media folder key in this path: HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\stores\media (or other stores key created).

Step 2 Right-click the *failed-expires* value. Select Modify to display the expiration day value. Permitted values include 0 (to expire immediately), and decimal values: 0.25, for example, causes files to expire in 6 hours.

Step 3 Enter the new expiration period.

Step 4 Close the Registry Editor to save the changes.

Step 5 Restart the FlipEngine to select the new expiration limit (for details, see Stopping and Starting FlipFactory on page 6-6).

SAMBA File Transfers on a Multi-NIC Server

To enable FlipFactory to properly execute SAMBA file transfers on a server with two or more NIC cards, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Open the netbios key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\cifs\netbios

Step 3 The Registry Editor displays the Values for the *netbios* key on the right.

Step 4 Right-click and select New > String Value.

Step 5 Name the string Value `laddr` (all lower case).

Step 6 Next, open the string Value.

Step 7 Enter the IP address or domain this server is operating in.

Step 8 Close the Edit String window.

Step 9 Perform the same task in the client folder in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\cifs\client

Step 10 Right-click and select New > String Value.

Step 11 Name the string value `laddr` (all lower case).

Step 12 Next, open the string Value.

Step 13 In the Value Data field, enter the IP address or domain this server is operating in.

Step 14 Close the Edit String window and close the Registry Editor.

Step 15 Restart the FlipEngine service to select the new IP address of the server (for details, see Stopping and Starting FlipFactory on page 6-6).

ACCESSING NETWORK SHARES WITH CUSTOM IDS

For FlipFactory to gain authenticated access to Windows network shares using a username and password different from its logon ID, specific server and authentication information must be provided in the registry.

FlipFactory can access Windows servers that have been designated as a monitor location or a destination location. In each case (the monitor or destination editor), you supply a server and share. FlipFactory identifies the registry key by matching the server name (host name or IP address) you supply in the Monitored Folder field or the Destination Folder field with the path string value you supply in each key you make.

When FlipFactory starts up, it processes all drives registry keys and authenticates the servers. Then, when the monitor or destination is accessed, proper access has already been established.

Note

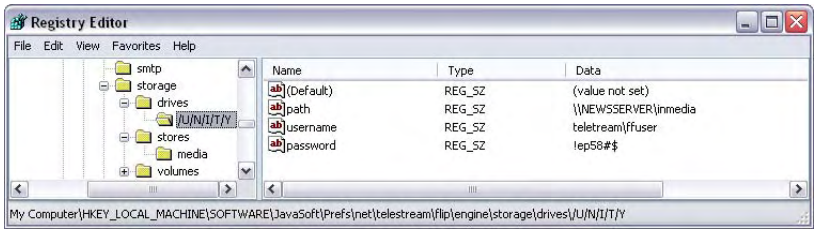
When you establish a load balance group or a FactoryArray, you must update each FlipEngine server with these registry entries so that jobs can be processed by any FlipEngine.

To enable FlipFactory to establish an authenticated connection to a network drive, share, or other resource, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Right-click the *drives* key in this path: HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\drives

Figure 7–6. New UNITY drive entry (sample, shown complete)



Step 3 Right-click the *drives* folder and select New > Key to create a new key.

Step 4 Provide a name for this new drive entry (this can be any name you choose). You can use a single letter or give it a more verbose name. (Java is case-sensitive. To use an uppercase letter, precede it with a forward-slash character (/). For example, /Unity or /U/N/I/T/Y).

Step 5 Next, enter the path and authentication parameters. Right-click your drive entry and select New > String Value.

Step 6 Rename the string value `path` (all lower case).

Step 7 Next, open the path string entry. In the Value data field, enter the UNC path to the shared network folder, in the form \\server\share or \\server, where server is the IP address or server name. For example, *NEWSSERVER**inmedia* or *NEWSSERVER*. For monitors and destinations, just use the server host name or IP address.

Step 8 Right-click your drive entry again and select New > String Value.

Name this string value `username` (all lower case).

Step 9 Open the string entry. In the Value data field, enter the username required to connect to the shared folder. If the user account is part of a domain, the username must include the domain name as well, in the format domain\username. For example, *TELESTREAM**ffuser*.

Step 10 Right-click once more on the drive entry and create another string value.

Step 11 Name this string value `password` (all lower case).

Step 12 Open the string entry and enter the password (if required) to connect as the specified user in the Data value field.

Step 13 Close the Registry Editor.

Table 7–1. Username, Password, and Path Details

Value	Description
Username	The username required to connect to the shared folder. If the user account is part of a domain, the username must include the domain or computer name, in the format Domain\Username or ComputerName\Username. For example, *ACMECORP**ffuser* or *BreakingNews**Bill*. If the username is part of a workgroup, just enter the username.
Password	The administrator password controls access to administrative functions: Administer Accounts, System Settings, and System Status. By default, no administrative password exists. If you enter a password, you must close the FlipFactory console to encrypt and save the password in the registry. When a password is in effect, the first time you click an administrative function you must enter the password.
Path	A UNC path to the shared network folder, in the form \\server\share or \\server. For example, *NEWSSERVER**inmedia* or *NEWSSERVER*, in the form of host name or IP address.

Step 14 Restart the FlipEngine service to use the newly-created store in FlipFactory by referring to the name of the drives key you created (see Stopping and Starting FlipFactory on page 6-6).

ADDING CUSTOM STORES

FlipFactory has implemented a *stores* method to more effectively manage large numbers of media files over numerous disk storage devices.

Note

The default Store is called "media" and the default Volume (associated with the default store) is called "default". The default location of this physical volume is in C:\Program Files\Telestream\FlipFactory\HTTP\media folder.

The default store and volume should be changed to external volumes when using any edition of FlipFactory in a FactoryArray or load balance group to improve recovery opportunities.

Stores are virtual locations defined by you in FlipFactory (by making Windows Registry settings) where media files can be organized into categories. Stores can be based on content type (news, spots, etc.), by content source or any other strategy appropriate for a specific application.

Each store defined in the Registry must have a volume (also defined in the registry), to write and read the files, during job processing. A volume is associated with a store by virtue of a key in the volume, with the same name as the store. If you do *not* create a volume in the registry and connect it to a store, that store utilizes the default volume, which is the *C:\Program Files\Telestream\FlipFactory\HTTP* directory.

If the userID that the FlipEngine service runs under does not have credentials to access the required LAN servers, you either have to provide those credentials to the FlipEngine service's user ID or you have to create Drive keys, associated with volumes, to provide read/write credentials to the FlipEngine service when it accesses a store.

Adding Stores

Each store has a unique name and file expiration period (specified in days). Files placed in the store are automatically deleted by FlipFactory after the expiration date.

When a FlipEngine starts, it identifies all stores, then creates a directory in its associated volume(s) for each one. For example, the default store *media* causes a *media* directory to be created in the default volume at *C:\Program Files\Telestream\FlipFactory\HTTP.*

Adding a Store Key

To add a store that you can use in factories, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Right-click the *stores* key in this path: HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\stores.

Step 3 With the stores key highlighted, select New > Key to create a new key.

Step 4 Enter a name for this new stores key. This may be any name you choose.

Telestream recommends using all lower-case letters and no spaces or special characters except dashes or underscores. (Java is case-sensitive. If you use an uppercase letter, you must precede it with a forward-slash character (/). For example: */New/Store* is displayed as *New Store*).

Step 5 Next, you'll create the description (optional) and expiration values (if you do not create an expiration string, FlipFactory by default expires the media in this store in 14 days):

Step 6 With your new entry selected, right-click and select New > String Value.

Step 7 Name the string value `description` (all lower case).

Step 8 Open the newly-created `description` string value. In the Value data field, enter a description of the store. For example, */network /monitor* as a description for the Network Monitor store.

Step 9 Close the Edit String window.

Step 10 With your new entry selected, right-click and select New > String Value.

Step 11 Name this string value `expires` (all lower case).

Step 12 Next, open the string value. In the Value data field, enter the number of days that the media will remain before being deleted.

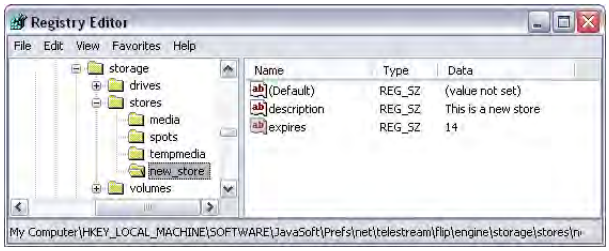
Step 13 Close the Edit String window and close the Registry Editor.

Table 7–2. Store Registry Key Entries and Description

Value	Description
Description	Textual description of this store. (Upper case letters need to be preceded by a '/' character.)
Expires	The maximum number of days that media files will remain in this store. If left blank, defaults to 14 days.

Step 14 Restart the FlipEngine service to use the store in FlipFactory (see Stopping and Starting FlipFactory on page 6-6).

Figure 7–7. Adding a new store in Regedit



Adding Volumes

Volumes are registry entries you create, which define physical disk directories where the media identified with a store is written or read. Each volume has a path, and a key.

Note

Volumes should always be configured as external volumes (network-accessible SANs, RAIDs, or file servers – ideally connected via Gig-E Ethernet) when using any edition of FlipFactory in a FactoryArray or load balance group, to improve recovery opportunities.

A volume can be assigned to one or more stores. The association is created by the presence of a volume-stores key in the volume, named with the store name. For example, the *News* and *Spots* Stores can be associated to the same physical volume.

Adding a Volume Key

To define a new volume that you can assign to stores, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the volumes key in this path: HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\volumes.

Step 3 Right-click *volumes* and select New > Key.

Step 4 Enter a name for this new volume key. This can be any name you choose. (Java is case-sensitive. If you use an uppercase letter, precede it with a forward slash character (/). For example: */New/Volume* displays as *NewVolume*.)

Enter the path, size, and authentication parameters (if necessary):

Step 5 Right-click the new *volume* key and select New > String Value.

Step 6 Name the string value `path` (all lower case).

Step 7 Open the new path string value. In the Value data field, enter the local or UNC path to the folder, in the form \\server\share.
For example, *newsserver**inmedia*.

Step 8 Close the Edit String window.

Step 9 Right-click the new *volume* key and select New > String Value.

Step 10 Name the string value `size` (all lower case).

Step 11 Open the new path string value. In the Value data field, enter a numeric value to limit the amount of data (in MB) to store in this path (100, for example). Or, enter 0 to use all available space if necessary.

Step 12 Close the Edit String window.

Step 13 Now, associate this new volume to a store by creating a volume-store key:

Step 14 Right-click the specific *volume* key, and select New > Key.

Step 15 Name the volume-store key the exact name of the store you created earlier, that you want to associate this volume with.
For example**,** name it *newsserver* if you want to associate this volume with the *newsserver* store; or name it *media* to associate it with the default media store, thus moving the local default store to a network server for improved load balance or FactoryArray durability.
Create a new volume-store key under the volume key for each store you want to use this volume to read or write media.

Adding Authentication

When the FlipEngine on one server must access a store on another server, it must have authenticated access the volume on which the store exists. If the userID used by the FlipEngine service does not have proper access, you can add authentication using a Drives key.

You add values to the drives key (with the store name) to store the authentication information. (If the store has a local volume, you can skip this step.)

Note

The username and password are required for network shares.

Step 16 Right-click the *drives* key in this path:
HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\drives

Step 17 With the drives key selected, right-click and select New > Key.

Step 18 Name the key identically to the volumes key you created.

Step 19 Now, you'll make three string values (path, username, and password) and assign data:

Step 20 Right-click and select New > String Value.

Step 21 Name this string value `path` (all lower case).

Step 22 Next, open the string value. In the Value data field, enter the hostname or IP address, in UNC format. For example, *newsserver*.

Step 23 Close the Edit String window.

Step 24 Right-click and select New > String Value.

Step 25 Name this string value `username` (all lower case).

Step 26 Open the string value. In the Value data field, the username required to connect to the shared folder. If the user account is part of a domain, the username must include the domain name as well, in the format domain\username. For example, *telestream\ffuser*.

Step 27 Close the Edit String window.

Step 28 Right-click one more time and select New > String Value.

Step 29 Name this string value `password` (all lower case).

Step 30 Next, open the string value. In the Value data field, enter the password (if required) to connect as the specified user.

Step 31 Close the Edit String window.

Table 7–3. Drives Registry Key Values and Description

Value	Description
path	The name or IP address for the volume in UNC format (\\server).
username	The username (if required) needed to connect to a shared network folder. If the user account is part of a domain, the username must include the domain name, separated by a slash: domain\username.
password	The password (if required) to connect as the specified user.

Step 32 Close the Registry Editor.

Step 33 Restart the FlipEngine service to use the new store in FlipFactory (for details, see Stopping and Starting The FlipEngine Service on page 5-2).

CREATING SPOT SERVER START AND END FRAME OFFSETS

Start and end frame offset keys provide the ability to add start and end frame offsets to the start and end time captures via Vyvx, DG Systems, and other catch servers' metadata. When new media is identified on these servers, the media start and end points are gathered as metadata.

The values entered via these registry entries will offset the start and end points within the FlipFactory Playback/Trim metadata label. They can then be used to write broadcast server SOM/EOM parameters or to be processed by the FlipFactory Media Trimming process.

To update the offset registry values, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Right-click the *volumes* key in this path:
KEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\plugin\monitor\<select vyvx, dvx or dgs>

Step 3 Update the offset_start and offset_end values:

Table 7–4. Offset Values and Description

Value	Description
offset_start	Enter a positive or negative frame offset value.
offset_end	Enter a positive or negative frame offset value.

Step 4 Close the Registry Editor.

The resulting Playback/Trim values are:

Start. The original start value gathered from catch server plus the offset_start value.

End. The original Start value gathered from catch server plus the offset_start value, plus the duration gathered from catch server plus the offset_end value.

RECEIVING DUPLICATE ORIGINAL PRODUCTS FROM CLIPMAIL

This key modification overrides the stream transport element in favor of the file localization transport element to support sending from ClipMail to FlipFactories that include a Duplicate Original. To override the stream transport element, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Navigate to the mail key in this path in the registry:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\plugin\monitor\mail.

Step 3 Add one or both new String values to the mail key (see rules below):

cmfileonlyaccount

cmfileonlyfactory

The value *cmfileonlyaccount* should contain a list of FlipFactory Accounts that will use the override. The values should be a comma separated list of Account names. For example:

cmfileonlyaccount demo,account1

The value *cmfileonlyfactory* should contain a list of Factories that use the override. The data should be a comma-separated list of Factory names. For example:

cmfileonlyfactory duporig1,duporig2

The account and factory names should be in lower case letters, but will match with an account or factory names with capital letters in it.

Value List Rules

If neither value is present or only the *cmfileonlyfactory* value is present, the monitor behaves in its default manner (no OVERRIDE active).

If the *cmfileonlyaccount* value is present, but not the *cmfileonlyfactory* value, then any job destined for one of the accounts in the list will be submitted using the localize override.

If both *cmfileonlyaccount* and *cmfileonlyfactory* values are present then the localize override will be used only if the job is destined for an account and factory from the lists.

Note

Avoid creating identically-named factories in different accounts.

Restart the FlipEngine service (for details, see Stopping and Starting FlipFactory on page 6-6).

CALCULATING END FRAME OFFSETS FOR 29.97 FPS

FlipFactory provides an optional trim feature for catch servers, enabled by the trim_frame value in specific monitor keys in the registry. If the value in the trim_frame value is true, FlipFactory calculates the *trimmed* duration of the spot by scaling the duration by a factor of 29.97/30.0 (rounding to the nearest whole frame). The Playback/Trim label End Time value, (the sum of Start Time and duration) reflects the trimmed duration.

The Playback/Trim label may optionally be used in FlipFactory to physically trim the media and/or to specify start/stop playback of the media or used to write broadcast server SOM/EOM parameters or to be processed by the FlipFactory Media Trimming process. The trim_frame value instructs FlipFactory to recalculate the end time value for clips from Vyvx and DGSystems catch servers.

You can create the value manually and set its data, or you can submit a job and then modify the value of the value to TRUE after the first job is run.

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the target monitor in this path: KEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\plugin\monitor\<select vyvx, dvx or dgs>.

Step 3 Create the trim_frame value and add TRUE or FALSE to the data.

Table 7–5. End Frame Offset Registry Key Entry and Description

Entry	Description
trim_frame	true | false

Step 4 Close the Registry Editor.

CHANGING THE ADMINISTRATOR'S PARAMETERS

FlipFactory allows you to change the username for the FlipFactory administrator. The default username is *administrator*, and no password is required, by default.

Changing Administrator Username and Personal Values

To change username and personal values, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Open the administrator key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\users\administrator.

Step 3 Right-click and create a new username or personal string value (select New > String Value).

Table 7–6. Administrator Values and Description

Value	Description
username	The username required to log on to the FlipFactory as administrator.
password	The password (if required) to log on as the administrator, entered in the System Settings window and encrypted for storage.
email	The email address used when FlipFactory sends emails as part of its notification process, for example, when a job is submitted. Entered in the System Settings window and saved in this value. Emails sent by FlipFactory will use this email address in the From and Reply to fields
personal	Identity of actual address (for example, Administrator) that displays in the address field.

Step 4 Double-click the username, and set the data value to the username you want.

Step 5 Close the Registry Editor.

Step 6 Restart the FlipEngine service (for details, see Stopping and Starting FlipFactory on page 6-6) to use the email value in FlipFactory. Stop and restart the console to use the new username/password values.

Resetting the Administrator Password

To reset the password, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

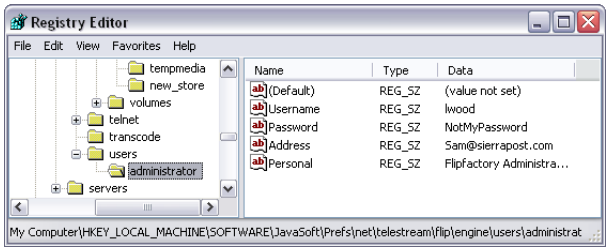
Step 2 Open the administrator key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\users\administrator.

Step 3 Delete the password value and close Regedit.

Step 4 When you log on, the password is empty.

Figure 7–8. Modifying administrator parameters in Regedit



CHANGING THE SQL DATABASE PARAMETERS

The instance name of SQL Server 2005 Express must be *FLIPINSTANCE*.

In the Services window, the instance displays as *SQL Server (FLIPINSTANCE)*.

FlipFactory allows you to change the following database parameters.

To change these values, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the database key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\database.

Step 3 Right-click and create/edit 4 string values (select New > String Value).

Table 7–7. SQL Database Registry Key Values and Description

Value	Description
Username	The username required to establish a connection to the database. (default: sa)
Password	The password required to establish a connection to the database. (default: <none>)
Database	The name of the FlipEngine SQL database. (default: flip)

Table 7–7. SQL Database Registry Key Values and Description

Value	Description
Period	Determines how often (in seconds) the database manager executes. The database manager is responsible for periodically updating messages. (default: 30)
Server (do not edit; see Configuring System Settings on page 6-20)	The name or IP address of the server hosting the FlipEngine® SQL database. (default: *localhost*)
Port (do not edit here; see Configuring System Settings on page 6-20)	The TCP/IP port of the SQL server instance. (default: <dynamic>)

Step 4 Close the Registry Editor.

Step 5 Restart the FlipEngine service to use these new values (for details, see Stopping and Starting FlipFactory on page 6-6).

CHANGING THE WATCH DOG KILL TIME-OUT

FlipFactory provides a 30-minute default kill time-out value. If a process has not progressed over a 30-minute period, it is automatically killed.

To change the Watch Dog kill time-out value, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the localhost key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\servers\localhost.

Step 3 Double-click the timeout string value.

Step 4 Modify the data to the desired time-out period in minutes.

Step 5 Close the Registry Editor.

Step 6 Restart the FlipEngine service for this parameter to take effect (for details, see Stopping and Starting FlipFactory on page 6-6).

MODIFYING THE DEFAULT STORE

FlipFactory provides the default media store at Program Files\Telestream\FlipFactory\HTTP\Media. However, you may want to provide a default store other than this location. For example, you may have set up one (or more) stores and want to have one of these new stores be utilized by default.

When FlipFactory has been installed on the C drive with limited space, and the D drive on the server has a large capacity of (100GB for example), you may want the store to be defined on the D drive.

To specify a default store, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the stores key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\flip\engine\storage\stores.

Step 3 Create a new value in the stores key. If the string value *default* is present, the data contained within will be utilized as the default store. For example, if a store is defined and named *flip_tmp*, the following data in the above value makes it the default:

default *REG_SZ* *flip_tmp*

Step 4 Close the Registry Editor.

Step 5 Restart the FlipEngine service for this parameter to take effect (for details, see Stopping and Starting FlipFactory on page 6-6).

INSTALLING RADIUS AVI CINEPAK CODEC

FlipFactory only supports Microsoft Standard uncompressed AVI files. Cinepak AVI Codecs are not supported on Windows Server 2003 because the codecs are loaded with Windows Media Player 11, which is not supported in Windows Server 2003. If you plan to use these codecs, you must obtain and install them yourself. The use of AVI Cinepak Codecs with FlipFactory on Windows Server 2003 is not supported by Telestream.

Telestream supports the use of Cinepak AVI codecs to produce Cinepak AVI files when FlipFactory is installed on Windows XP, which supports AVI Cinepak and also supports Windows Media 11.

To install the codec and update the registry on Windows Server 2003, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Locate the Drivers32 key in this path:

HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\Current Version\Drivers32\.

Step 3 Create a new string value and name it *vidc.cvid*, right-click and select modify to update the Value Data field with a value of *iccvid.dll*:

vidc.cvid REG_SZ flip_tmp

Step 4 Close the Registry Editor.

Step 5 Place the iccvid.dll in the Windows\System32 directory.

Step 6 Restart the FlipEngine service for this parameter to take effect.

MODIFYING THE DEFAULT PREVIEW FILE TYPE

When you click Preview on the Job Status or Job Details window, FlipFactory attempts to find a specific type of media to play, in this order:

1. The version with the specified suffix, if present
2. The original version of the media
3. the duplicate version of the media
4. The first playable version that doesn't meet the previous criteria.

To specify a file type for FlipFactory to play first, follow these steps:

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Navigate to this path:

HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft\Prefs\net\telestream\ui

Step 3 Create a new string value and name it *preview_extension*, right-click and select Modify to update the Value Data field with the suffix value: *wmv* for example.

preview_extension REG_SZ wmv

Step 4 Close the Registry Editor.

Step 5 Restart the FlipEngine service for this parameter to take effect (for details, see Stopping and Starting FlipFactory on page 6-6).

CREATING READ-ONLY JOB STATUS WINDOWS

The Job Status window in the FlipFactory console allows users to perform a variety of tasks, including deleting jobs, viewing job details, and opening the Resubmit/Forward window to submit new jobs based on the previous jobs output file.

You can create a *read-only* job status window which eliminates the Delete and Resubmit/Forward buttons. To create a Job Status window to limit the features to read-only for a specific user, follow these steps to update the JNLP and HTML files:

Copy & Update the JNLP File

Step 1 Navigate to this folder: <Default Drive:>\Program Files\Telestream\FlipFactory\jetty\webapps\FlipFactory.

Step 2 Copy the traffic.jnlp file and rename it <username>.jnlp, where <username> is the name of the FlipFactory account for which you want to restrict use of the Job Status window. For example: *ReadOnlyUser.jnlp*.

Step 3 Right-click on the file and select Properties; un-check Read-only so you can edit it, and click OK.

Step 4 Open the file in NotePad or other text editor and make these changes:
In the first line, change href="traffic.jnlp" to href="traffic.jnlp".
In the information > title element and both description elements, replace the phrase `Traffic Jobs` with `<username> Jobs`.
In the resources > property > username element, replace the term `Traffic` with `<username>`.
In the read-only element two lines below, replace `false` with `true`.

For example (see bold text):

```
<jnlp codebase="$$codebase" href="larryw.jnlp">
  <information>
    <title>Larryw Jobs</title>
    <vendor>Telestream, Inc.</vendor>
    <homepage href="http://www.telestream.net/products/
ff_tm.htm"/>
    <description>Larryw Jobs Viewer</description>
    <description kind="short">Larryw Jobs</description>
    <shortcut>
...
    <jar href="xerces.jar"/>
    <property name="username" value="larryw"/>
    <property name="password" value=""/>
    <property name="readonly" value="true"/>
  </resources>
...
</jnlp>
```

Step 5 Save the file and close it.

Copy & Update the HTML File

Step 1 Navigate to this folder: <Default Drive:>\Program Files\Telestream\FlipFactory\http.

Step 2 Copy the index.html file and rename it <username>.html, where <username> is the name of the FlipFactory account.

Step 3 Right-click on the file and select Properties; un-check Read-only and close.

Step 4 Open the HTML file in NotePad and replace all instances of *FlipFactory Console* with *<username>* or *Read-Only Job Status Window*, and edit the explanatory text, as displayed in the example.

Step 5 Next, change the JavaScript line near the bottom, replacing `launchApp('console')` with the `launchApp('<username>'`.

Step 6 In the same line, replace the term *Traffic Console* with *Launch Read-Only Job Status Window.*

For example (see bold text):

```
<html>
...
<td><p><font size="2"><B><font size="4" face="Arial,
Helvetica, sans-serif">Job Status Window Launcher</font></B>
<font face="Arial, Helvetica, sans-serif"><BR>
Click the link below to launch a read-only FlipFactory Job
Status window on your system. If this is the first time you
have launched the FlipFactory Job Status window on this
system, you will be asked if you would like to create
desktop/menu shortcuts. If you answer 'yes', shortcuts will
be placed on your system that will allow you to display the
Job Status window directly in the future. <BR>
<A href="javascript:launchApp('larryw')">Launch Read-Only
Job Status Window</A></font></font><font size="2"></font> </
p>
...
</html>
```

Step 7 Close and save the file.

Test the Read-only Job Status Window

Now, test your new Job Status window:

Step 8 Open Internet Explorer and enter *http://<FlipFactoryServer>:9000/<username>.html*, where <FlipFactoryServer> is *localhost* if you're on the FlipFactory server itself, or the server name or IP address if you're connecting via the network. <username> is the name of the user you entered as part of the html file name.

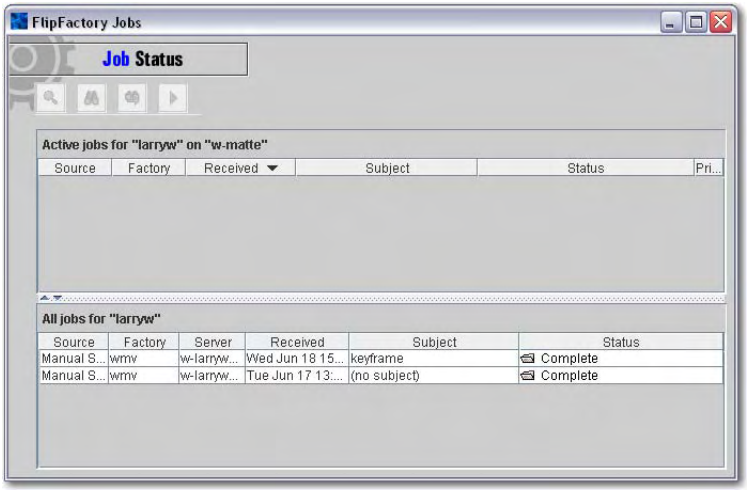
Step 9 Internet Explorer displays the Job Status Window Launcher page:

Figure 7–9. Read-Only Job Status Window Launcher page

Step 10 Click the link on this page to install the required Java files for the FF Console, add a shortcut to your desktop, and add a program entry at in the start menu at Programs > Telestream > FlipFactory for your new <username> console.

Step 11 Select the program entry or double-click the shortcut to display the read-only job status window you just created – notice the missing Delete and Resubmit/Forward button from the toolbar at the top of the window.

Figure 7–10. Read-only Job Status – no Delete or Resubmit/Forward



REGULATING MULTI-THREADED CODECS

Beginning in FlipFactory Version 6.1, some codecs have been multi-threaded, to make much better use of modern, multi-core servers ("Server Hardware Requirements" on page 2–8). DVCPro HD decoding, DNxHD decoding, and DNxHD and Flash 8 encoding have been implemented with multi-threaded frame processing (other codecs to be added):

These new components by default, can process up to 16 frames simultaneously, and provide opportunity for near real-time transcoding when using these codecs. Performance in FlipFactory 6.0 on an 8-core server is approximately 3 or 4 cores at about 60% usage. In FlipFactory 6.1, performance is all 8 cores, at over 90% utilization.

For customers using lower-capacity FlipFactory server platforms may experience issues with memory usage and slow transcode times, particularly when performing multiple, simultaneous transcodes using these updated components.

To throttle back multi-threaded frame processing, you should add registry entries to limit the number of threads that these components use.

The entries are all in the Software\Telestream\Flip Server\Settings key. All values are DWORDS. If the value is absent or set to zero, the default value of 16 is used. In general values should not be set above 16, and they should not be set at a value more than double the number of cores on this server. For example, on a 4-core server, Telestream recommends that you don't set values higher than 8. Values below 16 reduce the number of threads used and reduce performance problems. You should experiment to find the best setting for your hardware and workflows. Telestream recommends that you start by setting the values to be equal to the number of cores on the server.

Step 1 Launch the Windows Registry Editor (details and caution, page –12).

Step 2 Navigate to this path:

HKEY_LOCAL_MACHINE\SOFTWARE\Telestream\Flip Server\Settings

Step 3 Create a new DWORD value for each entry, and name it from the list below, right-click and select Modify to update the Value Data field with the numeric value: *8* for example:

Global.Load.Control DWORD 8

Step 4 Close the Registry Editor.

Step 5 Restart the FlipEngine service for this parameter to take effect (for details, see Stopping and Starting FlipFactory on page 6-6).

Multi-Thread Codec Limits Registry Settings

Global.Load.Control – This value controls the threading for all of the FlipFactory multi-threaded components. If there is a component-specific value, it overrides the global value.

- DNxHD.Decompressor.Load.Control – controls threading for decoding DNxHD.
- DVCProHD.Decompressor.Load.Control – controls threading for decoding DVCProHD (DV100).
- DNxHD.Compressor.Load.Control – controls threading for encoding DVCProHD (DV100).

CHAPTER 8

Processing Jobs with Metadata

This chapter describes how to use the MetaFlip, a licensed option in FlipFactory, to process and produce publisher-compliant metadata for use in RSS feeds, Podcast, VOD, and other digital broadcast applications.

Tip

Implementing FlipFactory workflows involving metadata may require creating, editing, and debugging documents using XML technology. XML, XSD and XPath development should be performed by a person skilled in the art. For more information, see www.w3schools.com.

Topics

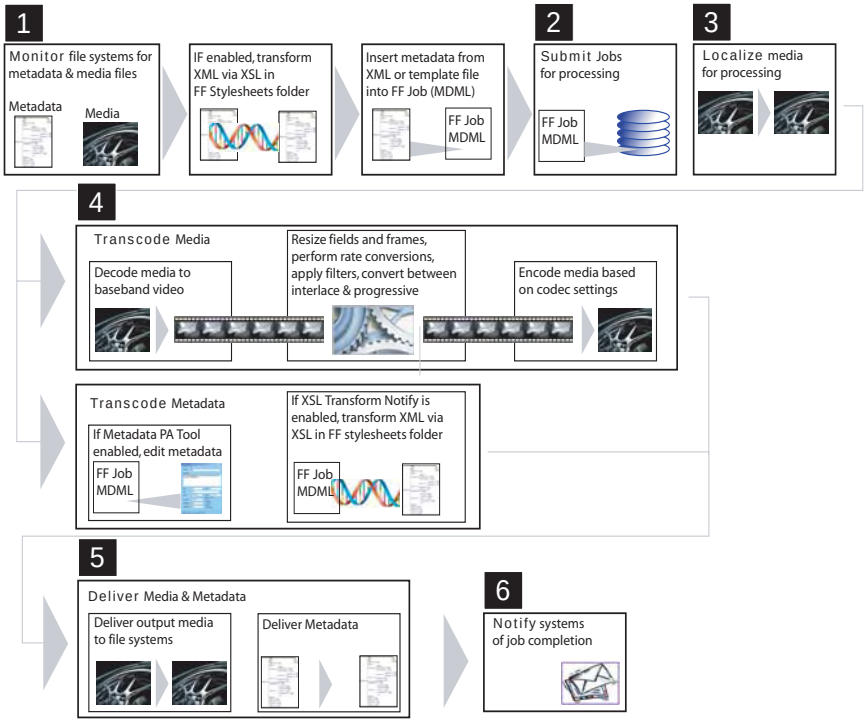
METADATA PROCESSING IN FLIPFACTORY

Metadata is increasingly required as a companion to published media, especially in Internet and VOD markets.

FlipFactory performs six incremental steps to complete each media transcoding job: monitor, submit, localize, transcode, deliver, and notify. If you're not familiar with these steps, review Factories Perform Six Transactional Tasks (page 3-5).

FlipFactory with MetaFlip also processes associated metadata files in a similar fashion, overlaying the six-transaction process with metadata functions in parallel with media processing in each job.

Figure 8–1. FlipFactory can process media & metadata in parallel



Monitor MetaFlip provides a Local Folder + Metadata monitor is a specialized Local Folder monitor. This monitor (as the name implies) monitors a local folder you specify. MetaFlip also provides a Network Folder + Metadata monitor that monitors shares. Both monitors poll the target directory for new media and metadata (be default, the same root name + xml suffix). To process metadata associated with media you submit, you'll submit media files to this monitor along with the accompanying metadata XML file for parallel processing.

Metadata Templates Alternatively, you can attach a template metadata file to each job automatically, by enabling the Metadata

Processing Process/Analyze tool in the factory you created. In the Metadata Processing editor panel, select the template to attach to the job when it is submitted (including schema and map document). When using this method, you can submit jobs using any method – manually (using Job Submit) or automatically, via monitors you set up.

Note

If you are creating a single-stage factory (because you do not need to manually edit the metadata during the FlipFactory workflow), the selected Schema and Map documents are ignored. The Schema and Map documents are only used in a two-stage factory where the template-based metadata is edited in the MetaFlip Editor. In a single-stage factory with templates enabled, the metadata must be correct at submission time.

Obtaining Metadata From Other Systems You can also automate submission of remote media and associated metadata files to a Local Folder + Metadata folder monitor. To do so, create a pre-processing factory with a Duplicate Original product. This allows you to ingest new media and metadata files from a remote system which you've specified in an appropriate monitor, and then deliver the media and metadata files to the target directory of the Local Folder + Metadata monitor or Network Folder + Metadata monitor.

XSLT Processing FlipFactory permits you to execute an XSLT stylesheet during the ingest phase of a job to transform the metadata if necessary. You enable and select this XSLT stylesheet processing under the Advanced checkbox in each Metadata monitor. The data that is inserted into each FlipFactory job ticket by this process must be well-formed XML.

Submit When the job is submitted, FlipFactory starts the job.

Localize Because the Local Folder + Metadata monitor only processes media and metadata that is already local to the FlipEngine, this step is skipped. If a Network Folder + Metadata monitor is enabled, this step duplicates the media and metadata into the default or selected local store.

Transcode The media is decoded, re-generated, and encoded in the usual manner.

Metadata in the job ticket is passed through to the next job step.

Tip

Optionally, in a two-stage workflow, you can enable the MetaFlip editor so that an operator can manually update the metadata elements on a job-by-job basis, before submitting the job output of the first-stage factory to the second-stage factory for final media production.

The Metaflip editor utilizes the Metadata Processing Process/ Analyze tool where you specify the Template, Schema, and Map XML files to configure the editor's user interface and the editing and validation. The Template is ignored when you submit metadata files along with media in monitors.

Deliver The media is delivered according to the factory's delivery specifications.

Notify External systems are notified as usual, if any notifications are set up. During this step, the metadata is written out to an XML file at the target destination – a local folder.

If you want to automate delivery of the associated metadata file (to the same location as the media or to another external system) to a non-local destination, create a post-processing factory with a Duplicate Original product, to deliver the output metadata file(s) from the local directory to the target directory of the external system specified in the Notify.

More XSLT Processing You can also execute another XSLT stylesheet during the Notify step to transform the metadata to a specific output format. For example, the podcast and iTunes XML transformation occurs in this step.

METADATA WORKFLOW OPTIONS

Metadata workflows consists of four documents that may be used to process metadata, plus metadata monitors, depending on how you've configured your factories.

Metadata Documents

You can create and supply the following documents:

- Template File

Located in the default FlipFactory installation directory (*C:\Programs\Telestream\FlipFactory\http\metadata\templates*), and selectable in the MetaData Process/Analyze Filter. Used to supply default data with media submitted for processing.

- Schema Document

Located in the default directory, in http\metadata\schemas. The schema document defines the structural constraints of the template – used in conjunction with the map document (following), instructing the MetaFlip Editor about each element and its display rules (if any) in the editor panel, among other things. The schema also allows the MetaFlip Editor to validate information typed into the form. Not used when factories are configured without metadata editing enabled.

- Map Document

Located in \http\metadata\loaders. A map document relates the individual elements in the schema document to the user interface components displayed in the form. The Metadata editor uses this document to identify each type found in the template document, then determine how to display it in the metadata editor panel by identifying a matching type element in the map document, which specifies which display class to use in the editor.

The map document can be modified so that types can be changed from a radio button to a check box, or to define how new types that have been added to the template document should be displayed, etc. The map document is not used when factories are configured without metadata editing enabled.

- XSL Templates

These stylesheets are located in \http\metadata\stylesheets. These stylesheets can be enabled to process the FlipFactory job tickets during the ingest phase (via the Local Folder + Metadata monitor) and after transcoding completes in the Notify phase (enabled in the Notify), to transform and export information located in the ticket, including filenames, file sizes, codec types, etc.

This four-document arrangement provides an ideal technological arrangement because the data restrictions such as the options that can be chosen, or which strings are allowed in a field are constrained by the XML schema document, while the preset or sample information is created by the template document.

With this arrangement, technicians who maintain these schema can enter often-used values in the XML template so that a data entry operator can view the normal value and have the option to change the value.

The schema document can be modified independently from the template to add, for example, an additional option to a list of choices while keeping the *normal* value as the default setting.

Local and Network Metadata Monitors

When you design a workflow where you submit metadata and media in parallel for transcoding or pass-through, you should use the Local Folder + Metadata monitor or the Network + Metadata monitor.

Use the Local Folder + Metadata monitor when you want to monitor a directory that is local to the FlipFactory server; use the Network Folder + Metadata monitor when you are monitoring a share on a Windows server on network.

Configuration Options

These monitors have configurable features for ingesting media and associated metadata when processing media files.

Tip

If media and metadata is best submitted from a remote system (that is not a Windows share), set up a Duplicate Original factory with an appropriate remote monitor. Use this factory and monitor to deliver the media and metadata to a second factory, configured with the Local Folder + Metadata monitor.

In addition to the features found in most other monitors (see the online help page for Metadata monitor's full feature set), the Metadata monitors have metadata-specific features.

By default, each Metadata monitor searches each cycle (default 60 seconds) for an XML file named the same as each new input media file (minus the extension – *myfile.mpg*, and *myfile.xml*, for example), and will not wait another cycle for the XML file to arrive. If the XML file search fails, the media job is submitted in the normal manner, without metadata.

If the paired XML file does exist, the data is inserted into the FlipFactory job ticket – often called an MDML message – to carry it through the entire job process.

The data is inserted as a special metadata label in the MDML as: *<label uuid="{b75ec5c6-4fdc-4692-a2ef-adf743a45ca6}" name= "General Metadata" description="Provides a Standard Metadata Label which can contain any other label and will try to load the "Metadata Editor"." copyright="Copyright (c) 2006, Telestream">*.

Note

The Local Folder + Metadata and Network Folder + Metadata monitors do not localize files.

Advanced Options

The Advanced option allows you to specify other interactions with template files, including transform before insert, and insert to any location

in the MDML. You can also specify how many poll cycles to wait for the associated metadata file to arrive.

Caution

If the MDML schema is not correctly edited (the schema is violated) when the data is inserted as a metadata label, then the job (specifically transcoding or notification) may fail.

Under the Advanced option the following options are available:

Attach MetaData From This menu allows you to select whether to attach the metadata from *a matching XML file* (default behavior) or from *a metadata template* file you supply. The XML file must be located in a specific FlipFactory installation directory (Default *C:\Program Files\Telestream\FlipFactory\http\metadata\templates*) directory when the FlipEngine starts, and you can choose it from the Template menu.

FlipFactory supplies three default empty templates, and two templates filled with sample data:

- CableLabs1.1VODTemplate.xml
- iTunesTVShowProfile2.0.xml
- Podcast.xml
- SAMPLE-Podcast.xml
- SAMPLE-CableLabs1.1VODTemplate.xml

These templates are used to insert a default data set into the job ticket. You can duplicate and customize these templates to meet your requirements.

Insert The choices in this menu allow you to specify whether to insert the metadata *as Metadata Label* or to insert it as the *last child of XPath selected node* in the MDML.

When you select *as Metadata Label*, the XML from the input file is inserted as a standard metadata label in the job ticket.

When you select *last child of XPath selected node*, you need to enter a valid XPath query in the XPath Query field to specify exactly where in the job ticket to insert this element.

See the Web site at http://www.w3schools.com/xpath/xpath_intro.asp for details about using XPath queries.

Note

Each FlipFactory job ticket is XML, in Telestream's MDML format. XPath processing must be implemented to insure that the modified job ticket contains fully-compliant XML that adheres to MDML specifications (see FlipFactory SDK).

Transform Input File Before Attaching This option allows you to transform data before inserting it into the MDML using the selected XSL stylesheet. The stylesheets are located in *C:\Program Files\Telestream\FlipFactory\http\metadata\stylesheets*.

FlipFactory supplies several default XSL stylesheets, whose names match the associated template. They are intended to be used in conjunction with each other. For example, you should use the CableLabs1.1VOD.xsl stylesheet when using the CableLabs1.1VODTemplate.xml template.

These stylesheets transform the associated template data into the specified output format. CableLabs 1.1-compliant XML file is generated from CableLabs1.1VOD.xsl, using the CableLabs1.1VODTemplate.xml as input.

Wait for Metadata File to Exist This option causes the monitor to wait for the metadata to become available (either as a matching file or a template file). You specify a maximum number of cycles before submitting the file. You can enter any positive integer in this field, or the keyword *Forever*. If *Forever* is entered, the monitor will not submit the media file until the metadata file exists.

How to Submit Metadata With a Job

Metadata can be submitted in several ways for processing by FlipFactory.

Dropping Media and Metadata into Monitored Folder

Typically, an operator drops a media file and its metadata file into the target directory of the Metadata Monitor (local or network), and the monitor submits it to FlipFactory. To use this method, perform these tasks:

Set up a Local Folder or Network + Metadata monitor and specify the target local folder. Set up the following controls as required:

Accept Filename Patterns enter * to process all files. To process only mpg files, you could enter **.mpg*. Use this wild card and OR pattern to implement a file acceptance policy. For details about entering patterns in the correct syntax, see the online help page for the Metadata monitor.

Reject Filename Patterns enter * to reject all files. To reject only XML files, you should enter **.xml*, for example. The default value is **.rm | *.xml*, to prevent the monitor from processing Real Media and XML files as media files. Attach Metadata from Matching XML Files

The default behavior of the Metadata monitor is to process matching XML files – those whose main file name (excluding the dot separator and suffix) matches, ignoring case. If there is no metadata file that matches a media file when, the media file is processed as usual.

If you do not check Advanced to display advanced control items, the Metadata monitor always processes the files in this manner.

Advanced Options Check Advanced to display advanced control items and change the operation of the monitor.

Attach Metadata From Select a metadata template if you have a general purpose template set up and want to use it to attach the metadata in the selected template to each job initiated by this monitor.

Transform Input File Before Attaching Check to cause FlipFactory to perform an XSLT transform on the input metadata before inserting it into the job ticket. This is important, for example, if you have a large XML file but only need 3 fields to be inserted into the job ticket. The XSL should be modified to select only the required data for insertion.

Wait for Metadata File to Exist Check to cause FlipFactory to wait until a matching file exists before processing the input media.

Dropping Metadata Only into Monitored Local Folder

You can also process metadata by itself, without media. To do so, set up a factory with a Duplicate Original product. In the Metadata monitor, set the accept pattern to *.*xml*. Drop your XML file into the target directory to initiate a metadata-only FlipFactory job. Set up and configure the XSL Transform Notify as required for your workflow.

Ingest Media and Metadata Files from External Systems

If you need to ingest media and metadata from an external file system that is not a Windows server or you can not publish a share on it, you need to move the media and metadata to FlipFactory using a different monitor. To set up a workflow for this situation, perform these tasks:

- Set up a factory and name it appropriately – FTP Metadata Monitor, for example.
- Add a monitor to this factory that can access your source file system (FTP in this example), and set it up to monitor the target file system and directory, accepting the proper file types by setting up the Accept File Pattern entries correctly: *.MPG | *.XML, for example.
- Create a product and specify Duplicate Original as the media format, so that FlipFactory will simply duplicate the files.
- Add a destination and specify the local directory on your FlipFactory server that your Local Folder + Metadata monitor is targeting for incoming media and metadata.

Manually Submitting Media and Metadata

You can manually submit media and associated metadata to a factory that has been configured to process metadata (RSS, VOD, podcast, etc.). The workflow can be a single factory or two factories (so that you can edit metadata before final processing).

To submit a job with metadata, perform these tasks:

- Set up a single factory or two factories (see Appendices G and H for examples).
- Display the Manual Submit window, select the factory, add the media and click Submit.

Tip

If you submit multiple media files in a single job, you must check Submit Multiple Files as Separate Jobs when processing associated metadata, or the job will not produce correct XML files.

TRANSFORMING METADATA WITH XSLT

Metadata can be transformed with XSL stylesheets at two points in a job. It can be transformed during the Monitor phase if the job was submitted via a monitor. Metadata can also be transformed in the Notify phase.

XSLT stylesheets must conform to Version 1.0. XSLT stylesheets and must be placed in FlipFactory installation directory under http/metadata/stylesheets to be utilized by FlipFactory:

Note

You must restart FlipFactory after placing the XSLT stylesheets in the directory, so that FlipFactory recognizes them.

Transforming XML Before Attaching to Job

You can use XSL stylesheets to transform the metadata during the monitor phase when:

- You want to reduce the overhead in the job ticket by selecting only necessary data from the XML file for insertion into the job
- You want to trim metadata down for just editable or output elements
- You want to reduce XML complexity to keep job processing and editing simple.

Transforming XML Before Delivery

You can also transform the metadata during the Notify phase for the same reasons mentioned above, or to extract dynamic values from a FlipFactory job ticket – output file name, size and clip duration, etc.

You can also create an XSL stylesheet to output RSS-compatible XML for ingest by external systems.

WORKING WITH THE METAFLIP™ EDITOR

The MetaFlip™ Editor provides dynamic form editing, so that FlipFactory operators can enter and edit metadata in a FlipFactory job.

The MetaFlip Editor is enabled when you enable the Metadata process/analyze tool, or when a metadata label element is inserted in a job ticket.

The MetaFlip Editor use three XML files to implement a custom editor:

— Template document

— Schema document

— Map document

These files allow the MetaFlip Editor to parse a template, display a custom editor panel (enforced by the schema), and ensure that the entered/edited data complies with the supplied schema.

Note

Validation with schemas in FlipFactory is limited. The xs:enumeration is the most completely-handled restriction. Contact Telestream for detailed information regarding the progress, or any requirements your organization may have for strong schema validation.

The MetaFlip Editor is not limited to specific XML data. It is designed for flexibility, and can be used to render XML data into any form of display, regardless of the data types specified in the XML elements.

The MetaFlip Editor requires that you supply a well-formed XML template, a valid schema for the template, and a map document that specifies the user interface components, used to render the XML provided in the template.

Tip

To modify, extend, and create your own custom forms in FlipFactory, you should be familiar with XML, XPath, XSD and related technologies. More information can be found at www.w3schools.com, in the section entitled XML Tutorials.

Metadata Editor Documents

The documents required by the MetaFlip Editor are stored in the *$FLIPFACTORY\http\metadata* directory in subdirectories named according to their types. FlipFactory loads new documents placed in these subdirectories when you restart the FlipEngine service.

In most cases, you can modify these documents without restarting FlipFactory. The exception: some changes may only apply on jobs processed after the change occurs. For example, if the selected template in the Metadata Processing Process/Analyze tool is updated, only jobs initiated after this saved change will reflect the updated template.

XML Template

XML templates are stored under *Program Files\Telestream\FlipFactory\http\metadata\templates* directory. No file naming convention is required to identify template documents; all XML files in this directory are displayed in the dropdown menu in the Metadata monitor.

An XML template is used by the MetaFlip Editor as what is often called an *instance* document. (This same document is also used without the MetaFlip Editor as an optional metadata file source).

You specify the XML template to use in the Metadata monitor. Check Advanced and select *a matching xml file* from the Attach Metadata menu. Or, select *a metadata template* from the Attach Metadata menu and select the template from the Template dropdown, which is populated with the templates in the directory.

The XML template provides default values that may be edited if specified in the Map document. You may also include values that must exist in the output but may never be visible or editable by the user of the Metadata Editor. (For example, a version number or default administrator email address that should only be changed when a new employee takes over the responsibility).

Most workflows can be implemented using this map document to change the default values rendered in the form, but it can also be modified to add additional values to display in the form.

XML Schema Document

XML Schema files are in $*FLIPFACTORY\http\metadata\schemas*.

XML schema documents are standard W3C schema documents. All type restrictions apply, along with limitations on the types of data that can be represented using XML. This is both powerful – and potentially complex.

The schema documents must be specified relative to the FlipFactory MetaData Markup Language (MDML) message schema, generally referred to as the FlipFactory job ticket. (A job ticket is created each time you submit media to a FlipFactory for processing.) MDML is defined in the FlipFactory SDK.

Specifying schema documents related to the MDML message schema is required because when FlipFactory parses the template data for display in the MetaFlip Editor, it is embedded inside the MDML message. The samples shipped with FlipFactory (located in the schemas directory) reflect this mapping.

The schema declares */message/parcel/content/label/metadata* before identifying the elements that appear in the template documents. See below (this RatingType element is a string type, for example):

```
 <xs:complexType name="ChapterType">
  <xs:annotation>
   <xs:documentation>The parts - ad placements</
xs:documentation>
  </xs:annotation>
  <xs:sequence>
   <xs:element name="Start" type="xs:time">
    <xs:annotation>
     <xs:documentation>Time - frames are encountered.</
xs:documentation>
    </xs:annotation>
   </xs:element>
   <xs:element name="End" type="xs:time">
    <xs:annotation>
```


```
      <xs:documentation>Time - if frames encountered.</
xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="Title" type="xs:string" minOccurs="0">
     <xs:annotation>
      <xs:documentation>If the chapter has a title that can
be displayed for navigation, it's captured here.</
xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="Description” type="tLongText”
minOccurs="0">
     <xs:annotation>
      <xs:documentation>If there is - included here.</
xs:documentation>
     </xs:annotation>
    </xs:element>
   </xs:sequence>
   <xs:attribute name="ChapterID" type="xs:string”
use="required”/>
   <xs:attribute name=”type" type="ChapteringType"
use="required"/>
 </xs:complexType>
```

The schema document provides the *restrictions* (as they are called in XML schema terms) on the fields, order, and number in a document which claims compliance with this schema. Since restrictions are specified in the schema document, the dynamic user interface generated for the editor uses the schema to obtain the list of values to display in a drop down box, or to verify that the text entered satisfies the requirements (for example, it is a text value, or an email address, or pure number with no characters), etc.

The MetaFlip Editor then maps the elements found in the template with its type declared in the schema document, and then determines which user interface component (a drop-down, or a text field, or other type) to display, based on the type-to-component mapping in the map file.

For the editor user interface to be composed correctly, all elements in the template must be properly declared in the schema.

Additionally, an element’s schema type is explicitly stated by the schema and can be seen in the example above. For example: *<xs:element name="Title" type="title">*.

This element specifies that the *Title* element has a type of *title*. The specific *title* specification is included later in the document, but the *title* name is the *schema-type-name* that must be stated in the map document to specify the user interface component used to render this data element.

XML Map Document

The XML map document provides specifications for the user interface size, initial position on the monitor, and the mappings from schema types to user interface components. Sample map document:

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
     Document : classLoader.xml
     Description:
       This document specifies the class to xs:type mappings
so that the UI display can be controlled by the xsd type
declarations. -->

<types>
  <defaultType
    class="net.telestream.ui.custom.ui.DefaultPanel"/>
  <defaultPosition x="150" y="0"/>
  <defaultSize width="600" height="700" hard="false"/>
  <type schema-type-name="xs:string"
    class="net.telestream.ui.custom.ui.LabelTextField"/>
  <type schema-type-name="xs:decimal"
    class="net.telestream.ui.custom.ui.LabelTextField"/>
...
  <type schema-type-name="TVCategoryType"
    class="net.telestream.ui.custom.ui.DropDown"/>
</types>
```

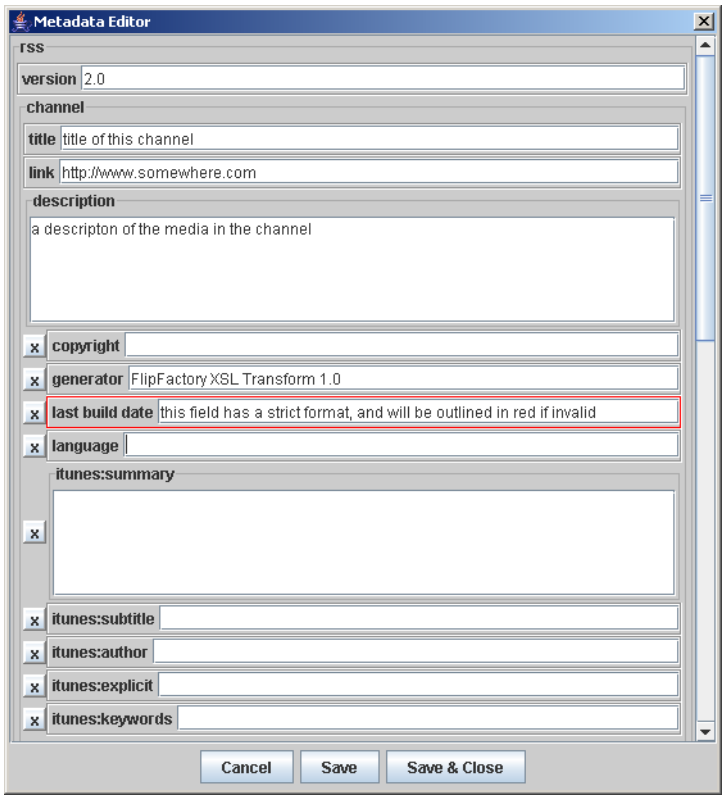
The *defaultPosition* and *defaultSize* elements are optional. If present, they are used to set the dimensions of the MetaFlip Editor window when it is opened by the operator.

If the *hard* attribute in the *defaultSize* element is missing or set to false, the dimension acts as an initial maximum size. The panel can grow until the content exceeds the specified dimension, then it adds scroll bars to the panel. If *hard* attribute is set, the form is displayed using the dimensions you specify, even if the content can be more compactly displayed.

You can supply as many type elements as required. Each type element must include the *schema-type-name* attribute. This attribute specifies the type name from the schema document. Also include the class attribute, which specifies the user interface component that should be used to render the specified type of data. The components provided in FlipFactory and a sample graphic are listed below. (Components can also

be defined by end users, provided that the required Java UI components comply with a specific set of interfaces.)

Figure 8–2. Metadata editor panel (iPod sample)



net.telestream.ui.custom.ui.DefaultPanel DefaultPanel displays child elements inside a box with a title of the *name* of the element.

net.telestream.ui.custom.ui.TextBox TextBox displays a titled box with the *name* of the element and the text from the element in a text box.

net.telestream.ui.custom.ui.LabelTextField LabelTextField displays a label with the *name* of the element and the text value displayed in a text field.

net.telestream.ui.custom.ui.LabelTextFieldMDMLSelect This component is the same LabelTextField, except the label text can be an xpath selection from the MDML message (given the current element as the context…or the "." element). This is specified by putting the following special element in the schema document inside an annotation element. The LabelTextFieldMDMLSelect renders the "./@name" xpath selected value for the label on any *Summary_Short* element.

net.telestream.ui.custom.ui.EmptyCanvas EmptyCanvas displays an empty box – not displayed. This is useful for hiding elements

from the form editor. This component will not prevent further child elements from being displayed according to their type mapping.

Modifying Document Sets

Always make a backup copy of FlipFactory's original XML templates, schemas, map documents, and stylesheets before making any changes.

For the simple situation where default values are changed, you can edit the template document in place to reflect the new default values. Now, any job submitted after the saved changes will display the changed fields in the MetaFlip Editor.

When you need to add new values to the editor, the process is more complex. It is important to always recall that the template provides the *instance* data, the schema provides the *framework*, (including valid lists of values, plus restrictions on content allowed in the instance document), and the map document specifies the type of user interface component that the instance data should be displayed.

To add a new element or attribute to the template document:

1. Edit and add the values/elements as necessary to the template document using any text editor and save it. The only requirement in this portion of the document is that it is well-formed XML.
2. If the element is not a new type or the type already exists in the schema document you're using, the editor renders the data properly without additional changes.
3. If the element is not a new type, but is missing from the schema document, it must be added in the appropriate section so that the element/data will be recognized by the MetaFlip Editor. When the new data is declared in the schema document, no additional changes are necessary. You can open the next job in the editor to display the fields rendered correctly.
4. If a new type was added in addition to new data, the map document must be edited so that the new type is rendered properly. Elements found in the template that are not specifically referenced in the loader document (by type) are displayed as an empty box with the element's name as a title.

Inside the box labeled Metadata, two elements are displayed as small boxes with the start of a text title. These elements are typically displayed when an element that has no default type specified in the loader document is contained in the template. This occurs because the *defaultType* element specified in the Loader document is being used to render that XML data in the editor. The *defaultType* element is currently set to *net.telestream.ui.custom.ui.DefaultPanel*, which provides an empty box inside which child elements can be rendered.

Good Template Design

Sometimes, your user interface requirements for the editor may not correlate directly to the basic template you design. In these situations, the best solution often is to create an XML template which makes it easy to create the required user interface, and then implement an XSL Transform in the Notify step to transform the edited data in the template to the meet the output data requirements.

The CableLabs1.1VOD document set provided with FlipFactory is a good example of this problem.

The intended output – ADI.dtd compliant XML – is poorly typed, and includes redundant fields. Redundant fields are not beneficial in the editor panel, given that it is inefficient to enter the same data more than once. Also, the poorly-typed characteristics of the ADI.dtd files prevent a form designer from selecting streamlined UI components.

For example, the Rating drop-down is not actually a different type than the Description field in the ADI.dtd-compliant file. The Rating field is best selected using a drop-down component, but the Description field is best entered via a text field. If the ADI.dtd file was used as the template, the editor could only display these fields as one type or the other.

In the CableLabs template and schema, a template was specifically designed to aid in creating the editor panel. This enables the Rating field to be classified as a different type than the Description field in the schema document, and thus can have a different mapping in the loader file. Now, the editor can display the Rating types as drop-downs and the Description types as text edit fields.

The template is then transformed (because it contains all the data required in the output ADI.dtd compliant file, in a different order) into the output ADI file using the XSL Transform Notify.

CHAPTER 9

Load Balance Groups

This chapter describes how to implement multiple FlipFactory systems into a load balance group.

Note

If you are creating a FactoryArray, you should create load balance group, then install FADM, per the FactoryArray User's Guide.

Topics

Note

To implement FlipFactory using SQL Server on an independent database server for use with a load balance group, see Installing a Stand-Alone SQL Server Database (page 10-4).

IMPLEMENTING A LOAD BALANCE GROUP

To enable load balancing, you connect two or more FlipFactory servers to a single, central FlipFactory database. Load balancing can speed workflow and increase capacity, and if a FlipFactory (other than the primary FlipFactory) fails, the other FlipFactories in the group continue to balance and process jobs. FlipFactory servers in a *load balance group* allow a FlipFactory operating at transcoding capacity to send a job ticket to an under-utilized FlipFactory for processing.

Load balancing is available beginning in FlipFactory Version 4.1 and does not require a FactoryArray license or additional software.

Implementation of a load balance group is a prerequisite to creating a FactoryArray. A FactoryArray is, in fact, a load balance group plus FactoryArray Database Management service, which provides real-time database mirroring and fail-over switching.

Note

If you are installing or upgrading a load balance group or FactoryArray, you must install the same version of FlipFactory on all servers using the central database, the same registry keys, and the same externalized stores.

If you do not use the same license on all Flip Engines in the group/array, you must configure monitors to only submit jobs to FlipEngines that are licensed to meet the requirements of the specific factory, or the job will fail.

When you implement a load balance group, all FlipFactory servers in the group use a single database. If the server hosting the group database fails, all FlipFactory servers in the group are rendered inoperative until the server is restored, because they rely on the group database for factory and job data.

However, automatic job and monitor recovery, plus database mirroring and recovery is enabled when you implement FactoryArray.

Externalize Stores

You should follow these stores configuration requirements when implementing FlipFactories in a load balance group in order to ensure complete access to media, monitor and destination shares, and job recovery.

To eliminate media access failures in a load balance group, you should not use local (server-based) drives or volumes – always use external storage – dedicated file servers, SANs or RAIDS; ideally connected via GigE for

highest file transfer speed via LAN. Also, you must never reference drive letters; always use Shares and always use UNC paths to reference them.

FlipFactory (all editions) has specific store configuration requirements that you must follow in a load balance group, in order to ensure full access to media, monitor and destination shares, and job recovery – all aspects of ensuring the most durable configuration.

When load balancing, job and monitor recover occurs, FactoryArray may assign a different FlipEngine to the process the job. Load balance groups centralize all account, factory, and job specifications in its single, shared FlipFactory database.

To eliminate media access failures in a load balance group, you should refrain from using local (FlipEngine server) drives or volumes unless you're certain that your capacity and performance requirements are met using them. Telestream recommends using external storage – network file servers, SANs or RAIDS; ideally connected via GigE for highest network speed. If you do use local (FlipEngine server) drives, never reference drive letters; always use Shares on file servers, and always use UNC paths to reference volumes.

If you don't follow these requirements, load balancing and job and monitor recovery may fail, for typical reasons including:

- The assigned FlipFactory can't recover a monitor configured with a store pointing to a folder on a local drive of the failed FlipEngine, when the FlipEngine server fails (software or hardware), or the network connection is severed
- The assigned FlipFactory can't recover a monitor configured with a local folder pointing to a folder on a local drive of the failed FlipEngine using a drive letter reference (which is invalid on another computer), or lacks credentials, causing authentication problems.

CONFIGURING STORES IN A LOAD BALANCE GROUP

A store in FlipFactory is a virtual location where media files can be organized into categories. Stores can be based on content type (news, spots, etc.), by content source, or any other strategy appropriate for a specific application. Stores can be associated with one or more physical volumes.

Stores are used by monitors as well as destinations in FlipFactory to localize (duplicate the original media from its monitored location to a

specified target server and directory called a *store*) media during job processing to speed up transcoding.

Note

For a complete discussion of stores, with instructions for implementing and configuring them using Registry keys, see Adding Custom Stores in the FlipFactory User's Guide, Chapter 6, Customizing FlipFactory. Make sure all registry keys are identical across each FlipEngine server in a load balance group.

Stores Must be Network-accessible Shares

When you define stores for use by any factory in FlipFactory in a load balance group, you should always make sure that each store points to a share or other network-accessible store (SAN or RAID), not a local drive. Additionally, the share should be on a dedicated file server, RAID, or SAN, and ideally connected via GigE Ethernet for high speed access.

Using shares ensures that any FlipEngine in the FactoryArray which is assigned to recover a monitor and process jobs from a failed FlipFactory server can still access the media.

The default FlipFactory store is named media, and it is defined as a local folder: *C:\Program Files\Telestream\FlipFactory\HTTP\Media.*

Note

The default media store must be published as a network-accessible share and always referenced using its UNC path.

However, if the server fails and the job is recovered, the recovering FlipFactory server won't reference the C drive on the failed server, it will reference its own, which is incorrect. You must modify the Registry settings for the default media store and all other stores, to reference a network share before putting each FlipFactory server into a load balance group.

Identical Registry Settings

All customization of FlipFactory, including store definitions, authentication, media and job expirations, cycle times, etc. are all stored in the Windows Registry – *locally* – on the FlipEngine server.

Anything stored locally is problematic when recovery is attempted, because the registry settings that control the failed server are not available to the FlipEngine that is responsible for the recovery task.

Therefore, to accomplish load balancing, job and monitor recovery, each FlipEngine must have identical FlipFactory Registry settings, such as:

- Authentication settings must be identical for monitor and destinations

- Media and Job expiration periods
- All Stores
- Cycle times
- Spot Server start and end frame offsets
- other custom FlipFactory Registry settings

Replicating Custom FlipFactory Registry Settings

To duplicate customized registry settings across all FlipFactory servers in a load balance group, first make sure each factory is working properly.

Next, make a list of all registry settings you've customized. For details on FlipFactory and registry settings, see Using the Windows Registry to Customize FlipFactory (page 7-12).

Now, open Regedit on your first FlipFactory, and select the highest group key that will catch all custom keys (without going so high in the key chain that you catch keys that should be unique). Export this branch, making note of the file name you assigned. Repeat this process for all keys you customized.

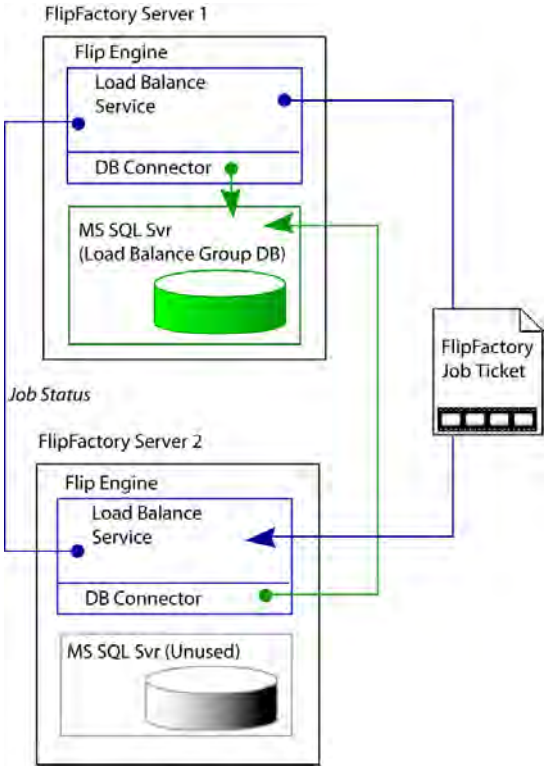
Move these files onto each FlipFactory server in the load balance group (or put them in a share), and then, on each FlipFactory server in the group, double-click each file to add it to the registry on that server.

When you're done, restart the FlipEngine and test.

DATABASE USAGE

Each time you install FlipFactory on a server, both the Flip Engine and the database are installed. When you connect a FlipFactory to a load balance group, its database simply remains unused.

Figure 9–1. load balance to share jobs and improve performance



<HT_Blue>Figure 9–1 depicts a two-FlipFactory implementation, where FlipFactory Server 2 has been configured to use the database on FlipFactory Server 1 instead of its local database, now unused. As each FlipFactory operates by processing jobs, all settings, configuration details, factories and accounts, and job status is stored in the group database on FlipFactory Server 1.

When FlipFactory 1 creates job tickets for incoming media in a monitored folder, it equally distributes these jobs to other FlipFactory servers in the load balance group. There is no practical limit to the number of FlipFactory servers that can be utilized in a load balance group.

Media and Jobs Expiration

Each FlipFactory server in a group is responsible for expiring its own media from its stores and jobs it has run, from the database. For example, <HT_Blue>Figure 9–1 depicts FlipFactory Server 1 and FlipFactory Server 2. FlipFactory Server 1 is operating a monitor – only one FlipFactory operates a monitor at any given time. If the FlipFactory

operating the monitor fails, it is not restarted by another FlipFactory. If you need this monitor restart feature, you should implement a FactoryArray.

The monitor is responsible for detecting new media and generating the job. This job may be processed by any FlipFactory in the array. FlipFactory Server 1 (in this instance) is transferring some jobs based on workload to FlipFactory Server 2. After each job is complete, each FlipFactory server is only responsible for expiring jobs and media that it processed. FlipFactory Server 2, therefore, is responsible for expiring jobs that were transferred to it for processing.

In certain failure circumstances, media and job entries in the database may not be deleted immediately. If the FlipFactory is still running, but no longer has access to the database or network it will expire its media, but the jobs it completed are not removed until it rejoins the group.

If a FlipFactory server fails and the FlipEngine service is no longer running, the completed job entries in the database and the media that it used are not expired until it is brought back up.

Prerequisites

Before you configure a load balance group, perform these tasks:

Install FlipFactory on each FlipFactory server.

Note

Each FlipFactory in the group must have a separate license file or it will not be able to flip media. You may not share licenses among FlipFactories – you must obtain a separate license for each FlipFactory server you install.

All servers in the group you create must be located on the same subnet, the same network domain, and each user account must be in the domain.

Most transactions in FlipFactory are time-stamped from the time value in the FlipFactory database. However, if you have Flip Engines in a FactoryArray|load balance group in different time zones, when you schedule jobs, the time value is from the Flip Engine where the job was scheduled.

Set up each user account for FlipFactory with network access.

Note

The specified account must have administrator privileges on the local computer. This account is utilized in the configuration of the other servers and must have administrative privileges on those servers as well.

Implementation Steps

To implement a load balance group, follow these steps:

Step 1 If you plan to run the database on one of the existing FlipFactory servers, skip to Step 4. If you plan to run the database on an independent database server, perform a FlipFactory installation on the target database server to install SQL Server.

Do not purchase or install a FlipFactory license on this server.

Note the IP address or host name of the new database server, for use later when you're updating system settings on the FlipFactory servers that you want to connect to this database.

Step 2 Note the IP address or host name of the new database server, for use later when you're updating system settings on the FlipFactory servers that you want to connect to this database.

Step 3 In the Services control panel, shut down the Flip Engine service and set the service properties to manual or disabled.

Step 4 Review your accounts and modify to be unique. If this is a new installation, skip this step.

Step 5 Change system settings to point to the target database server.

For each FlipFactory server you're connecting to the target database, display the System Settings window and update the Database Server field with the host name or IP address of the target database server. Save the settings, log off, and close the console.

Step 6 Stop the Flip Engine Service. Now that the Flip Engine service is pointing to the new database server, stop the service immediately to prevent any factories from failing.

Step 7 For each FlipFactory server you're connecting to the target database server, display the Services window and stop SQL Server (FLIPINSTANCE):

Right-click SQL Server (FLIPINSTANCE) and display Properties. On the General tab, set Startup type to Disable and click OK to update. This instance is no longer used. When FlipFactory restarts, it will connect to its target database.

Step 8 Back up the database on each production FlipFactory server in the load balance group.

If you do not have Microsoft back up software, you can download and install SQL 2005 Management Studio. Follow the procedures at http://msdn.microsoft.com/en-us/library/ms187510.aspx.

If this is a clean FlipFactory install, skip this step.

Step 9 Now, for each existing production FlipFactory you want to merge into the new database server, export the accounts ("Importing and Exporting User Accounts and Factories" on page 10–6), then merge all of the accounts in

the current production databases to the new database server (“Importing and Exporting User Accounts and Factories” on page 10–6. (If this is a clean FlipFactory install, skip this step.)

Step 10 Restart the Flip Engine Service. Go to each FlipFactory server (now pointing to the target database server), and restart the service.

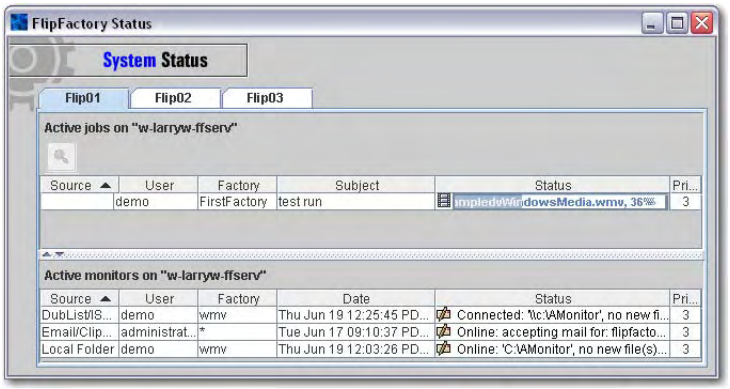
Validating your Load Balance Group

After you have configured your load balance group, you should test each FlipFactory for proper operation, following these steps:

Step 1 On each FlipFactory server in the group, launch the FlipFactory console and make sure that you can log in as a user. This validates connection to the Flip Engine and the group database.

Step 2 On each FlipFactory server, display System Status and verify that each Flip Engine in the group is displayed in a tab.

Figure 9–2. System Status displays all FlipFactories in group



Step 3 Set up a sample factory or identify a factory you’ve already created. On each FlipFactory, use the Submit Job window to manually submit a sample job (use the same job and media on each server) to the designated factory. Display the Job Status window and verify that it completes normally (accessing media, delivering the product, viewing proxies, etc.).

Step 4 From a one FlipFactory, manually submit a job to another FlipFactory. Display the Job Status window to verify that it completes normally.

Step 5 Drop several media files (at least 1 per Flip Engine) into a monitored folder to force the group to distribute these jobs.

Step 6 Display System Status, display the tab of each server to verify that the jobs are being distributed and processed, and verify that each job completed normally.

Step 7 When you’re done testing and all your results are satisfactory, return the FlipFactory group back into production.

CHAPTER 10

Database Implementations & Operations

This chapter describes using Microsoft SQL Server 2005 Express Edition, the default database system installed with FlipFactory. Throughout this chapter, the Microsoft SQL Server 2005 Express Edition database is referred to generally as *SQL Server*, unless a specific version is required.

You can also use this chapter to upgrade SQL Server, implement SQL Server on an independent database server.

Note

On a single FlipFactory, stop the FlipEngine service before performing database operations.

In a load balance group, stop all FlipEngine services.

In a FactoryArray, you should never perform database operations without first shutting down the FADM service on the target server to avoid changes in the database during operations.

Topics

MICROSOFT SQL SERVER 2005 EXPRESS EDITION

Microsoft SQL Server 2005 Express Edition is installed with FlipFactory. The database management system is installed by default on the same server as the Flip Engine service.

Optionally, you can install SQL Server on a separate server, and connect one or more Flip Engines to it. Whether installed in a single server or multi-server implementation (load balance group or FactoryArray), FlipFactory's database operations are transparent to FlipFactory users.

Database Capacity Warning

When the data in the database exceeds 80 percent of the 4 GB maximum size limit set by Microsoft, an email is automatically sent to the FlipFactory system administrator (Configuring System Settings (page 6-20)), and a dialog, warning of the limit, also displays on the FlipFactory console.

You should stop submitting jobs and reduce the job expiration period, by adjusting the job expiration period in Advanced System Settings (page 7-2).

If this action does not result in a reduction of the database size and return to normal operations, contact Telestream Customer Service for assistance.

Exceeding Database Capacity

When the database reaches the 4GB size limit, jobs you submit are no longer processed because they can't be saved in the database. You should immediately stop submitting jobs and reduce the job expiration period, by adjusting the job expiration period in Advanced System Settings (page 7-2).

If this action does not result in a reduction of the database and return to normal operations, contact Telestream Customer Service for assistance.

UPGRADING MS SQL SERVER 2005 EXPRESS EDITION

Use this section to upgrade the default MS SQL Server 2005 Express Edition database to Workgroup Edition or higher, to eliminate the data limit of 4GB and take advantage of performance gains and other features you need.

Note

You can upgrade SQL Server for use with any edition or configuration of FlipFactory, load balance groups, or FactoryArray systems.

Implementation Steps

To upgrade SQL Server for your FlipFactory server, follow these steps:

Step 1 Stop the Flip Engine Service or services (in a group or Array) and back up the database with SQL 2005 Management Studio. If you do not have Management Studio, you can download and install it. Follow the procedures at http://msdn.microsoft.com/en-us/library/ms187510.aspx.

If this is a clean FlipFactory install, skip this step.

Step 2 Download the SQL Server edition you want and use it to upgrade the target database server.

When you upgrade SQL Server, select the *FLIPINSTANCE* instance. In the Services window, the SQL Server instance displays as *FLIPINSTANCE*.

Note

If you don't name the instance FLIPINSTANCE, you must identify the port number used by SQL Server and change FlipFactory system settings Database Port field accordingly – see FlipFactory User's Guide for details.

Step 3 Restore the FlipFactory database with Management Studio.

If this is a clean FlipFactory install, skip this step.

Step 4 Restart the Flip Engine Service. Go to each FlipFactory server (now pointing to the new database server), and restart the service.

Step 5 Test each FlipFactory for proper operation with the new database.

INSTALLING A STAND-ALONE SQL SERVER DATABASE

Follow the steps in this section when you want to implement SQL Server on an independent server to support a stand-alone, high-performance FlipFactory server, or to support a load balance group. Do not use this section if you're using FactoryArray – instead, see the FactoryArray guide and use the FactoryArray installer.

Implementation Steps

Step 1 Perform a FlipFactory installation on the target database server, so that the installer installs SQL Server, and names the instance *FLIPINSTANCE*.

Step 2 *Do not purchase or install a FlipFactory license on this server.*

Step 3 With the FLIPINSTANCE of the SQL Server database installed, uninstall FlipFactory. The FlipFactory software and service is uninstalled, but the SQL Server FLIPINSTANCE remains for you to connect other FlipFactory servers to.

Step 4 Optionally, upgrade your SQL Server to another edition (Upgrading MS SQL Server 2005 Express Edition (page 10-3)).

Step 5 Note the IP address or host name of the new database server, for use later when you're updating system settings on the FlipFactory servers that you want to connect to this database.

Step 6 Review your accounts and modify their names to be unique. If you are migrating a single FlipFactory (or a new installation), skip this step.

For each existing FlipFactory you want to merge into the new database server, identify all of the accounts on each FlipFactory server. Rename any accounts that are duplicated across FlipFactory servers to make sure that all accounts are unique and can be replicated on the new database.

Step 7 Change system settings to point to the new database server.

For each FlipFactory server you're connecting to the new database, display the System Settings window and update the Database Server field to the host name or IP address of the new database server. Save the settings, log off and close the console.

Step 8 Now that the Flip Engine service is pointing to the new database server, stop the service immediately to prevent any factories from failing.

Step 9 For each FlipFactory server you're connecting to the new database server, display the Services window and stop the Service:

Right-click SQL Server (FLIPINSTANCE) and display Properties. On the General tab, set Startup type to Disable and click OK to update. This instance is no longer used. When FlipFactory restarts, it will connect to its new database.

Step 10 Back up your production FlipFactory's database.

If you do not have Microsoft back up software, you can download and install SQL 2005 Management Studio. Follow the procedures at http://msdn.microsoft.com/en-us/library/ms187510.aspx.

If this is a clean FlipFactory install, skip this step.

Step 11 Now, for a single FlipFactory, restore the production database using SQL 2005 Management Studio.

If this is a clean FlipFactory install, skip this step.

Step 12 For multiple, existing production FlipFactories you plan to merge into the new database server, back up the database on each FlipFactory server.

For multiple, existing production FlipFactories you want to merge into the new database server, merge the current production databases to the new database server by exporting all accounts (Exporting Accounts (page 10-7)) and then importing them Importing Accounts (page 10-9) into the new central database.

Caution

When you export accounts and import them into a clean database (either from one or many), you lose your job history. If you do not want to lose your job history, contact Telestream Customer Service.

Step 13 Restart the Flip Engine Service. For multiple FlipFactory servers, go to each FlipFactory server (now pointing to the new database server), and restart the service.

Step 14 Test each FlipFactory for proper operation with the new database.

IMPORTING AND EXPORTING USER ACCOUNTS AND FACTORIES

From time to time, you may want to move (or copy) an account with all of its factories from one FlipFactory database to another FlipFactory database or you may want to archive the account in XML format.

You may also want to provide a back up copy of the database, or copy or move all accounts from one server to another, or to merge 2 or more FlipFactory databases (which contain all accounts and factories) into a single database.

Factory specifications in FlipFactory are stored directly in the FlipFactory database. Factories are organized by account. An XML-based file of the account and its factories is saved when you export it for archive purposes, or to use it for importing into another FlipFactory or combining FlipFactory databases.

An XML file is also created when you perform an automatic upgrade, for archive purposes. This file is not used by FlipFactory for any other reason. Only the factory specifications in the database are used by FlipFactory.

Note

Before combining two or more FlipFactory databases by exporting and importing accounts, make sure that each account is named uniquely before exporting them.

If you have accounts in one or more FlipFactories that you are including in a load balance group, you should move the accounts to the new load balance group database. Once a FlipFactory is part of a load balance group, it obtains its User Account list of factories directly from the centralized load balance group database.

Moving an account is a two-step process. First, export the account from the current FlipFactory database into an XML-format account file. You can export all accounts or a single account via the FlipFactory console ("Exporting All Accounts" below or "Exporting a Single Account" on page 10–7) or using Telnet ("Exporting a Single Account via Telnet" on page 10–8).

After exporting accounts, you can import them into the load balance group database. The process of importing accounts is explained in "Auto-importing Accounts" on page 10–9 or "Importing an Account via Telnet" on page 10–10.

Exporting an account copies all the account's factories and all settings in them to an XML file for storage or transfer to another FlipFactory database.

EXPORTING ACCOUNTS

You can export accounts in several ways, depending on your requirements.

- "Exporting All Accounts" (below)
- Exporting a Single Account (page 10-7)
- Exporting a Single Account (page 10-7)

Exporting All Accounts

To export all accounts from a FlipEngine database via the FlipFactory console, follow these steps:

Step 1 On the FlipFactory console, click System Settings to display the System Settings window.

Step 2 Click the Email Technical Support button in the toolbar display the Email System Info to Tech Support dialog.

Step 3 Select Copy Files... and click OK.

When all of the files have been saved in the *C:\Program Files\Telestream\FlipFactory\SupportInfo* directory, open this directory to display them. Locate each of your account XML files, and use them to import into another FlipFactory database ("Importing Accounts" on page 10–9), save them for later use, or send them to Telestream Customer Service, for example.

Exporting a Single Account

To export one account at a time from a FlipEngine database via the FlipFactory console, follow these steps:

Step 1 On the FlipFactory console, click Administer Accounts to display the Administer Accounts window.

Step 2 Select the account to export.

Step 3 click the Export icon in the toolbar to display the Export Account dialog.

Step 4 Select a destination for the XML file (and optionally rename it), then click Export.

When the XML file has been saved, you can import it into another FlipFactory database ("Importing Accounts" on page 10–9), save it for later use, or send it to Telestream for support, for example.

Exporting a Single Account via Telnet

To export one account at a time from a FlipEngine database using Telnet, follow these steps:

Note

When using Telnet with FlipFactory, you must type the command line correctly, or it will not execute. If you make a typing error, press Enter and enter the command again.

Make sure that the account name you export does not overlay an account of the same name in the new database. If you have accounts with the same name in different databases, but want to save both, you must rename one of them to a unique name before exporting the account.

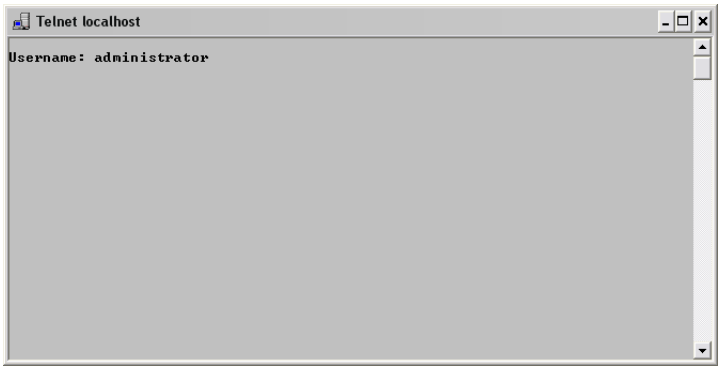
Step 1 On the FlipFactory server where you are exporting an account, click Start > Run to display the Run window.

Step 2 Type `cmd` to display the command window.

Step 3 Type `Telnet localhost` to log on to the target FlipEngine's command line interface.

Step 4 FlipFactory displays a username prompt.

Figure 10–1. Logging on to database



Step 5 Type `administrator` (default FlipFactory administrator user name) or other administrator user name to log on to the FlipFactory database.

Step 6 FlipEngine displays the password prompt.

Step 7 No password is assigned to the default administrator user name. Press Enter to continue, or type the password and press Enter if you have created one for the username you're using to log on.

To export an account, perform the following tasks:

Step 8 Type `export AccountName FileName`, where AccountName is the text string identifying the account as displayed in the console; for example, *demo*. FileName is the fully-qualified path and the file where

FlipFactory stores the XML-formatted account information; for example: *C:\accounts\demo.XML*.

Be sure to create a folder for your exported account before you export the XML file into it.

Figure 10–2. Exporting an account via Telnet

Note

If no path is specified, FlipFactory stores the file in the path %systemroot%\System32 (where %systemroot% is the drive where your operating system is installed).

Step 9 Press Enter to execute the command. The FlipEngine creates the file and exports the account definition in XML format.

Step 10 Type `logout` and press Enter to disconnect from the FlipEngine and terminate Telnet.

IMPORTING ACCOUNTS

You can import accounts from the console or via Telnet.

- "Auto-importing Accounts" (below)
- Importing an Account via Telnet (page 10-10)

Note

When importing an account into another FlipFactory server, be sure to consider there may be different licenses, different stores, variances in access to various input/output systems, shares, etc. that render factories inoperable on another FlipFactory.

Factories imported into another FlipFactory are not assured of working correctly, due to configuration and system access differences.

Auto-importing Accounts

If you are implementing FlipFactory on a new server, or you are creating a central database for a load balance group or a FactoryArray, you can place all your accounts in a single folder and FlipFactory will import them

automatically when it starts up. However, FlipFactory will not overlay existing accounts. FlipFactory will not overwrite an existing account. Instead, it adds the suffix *alreadyexists* to the file (for example, *demo.xml.alreadyexists*) if the file you are importing is named the same as an account that already exists in the database. To replace an account, you must first delete it from FlipFactory.

To automatically import one or more accounts into a FlipFactory server, follow these steps:

Step 1 Move the individual account XML file(s) to the local server that is operating as the FlipFactory group database server or to the FlipFactory server you are going to perform the import into, or place them in a network-accessible share and mount the share on the target server.

Step 2 Move all XML files you want imported (each account must have a unique name) into the directory *C:\Program Files\Telestream\FlipFactory\XML\accounts\import* (this is the default installation directory, which may be different on your server).

Step 3 Restart the FlipEngine service and FlipFactory will automatically import all accounts into its database.
Successfully imported account files are appended with *imported* (for example, *demo.xml.imported*). Files that could not be processed successfully are suffixed with *invalid* (*demo.xml.invalid*).

Step 4 Log back onto the FlipFactory console to display the new (or updated) account.

Importing an Account via Telnet

The Telnet command for importing accounts into FlipFactory is import:

```
import {filename} [-monitor] [-notify] [-mdml [path]]
```

Imports a user account from the XML file specified by the {filename} argument.

If the account exists it is overwritten, otherwise a new account is created.

Monitors that reside in the imported account will be started on the FlipEngine that these accounts were imported into.

Options:

-monitor disables all Monitors

-notify removes all Notifications

-mdml adds MDML Notification to each factory. If specified, 'path' sets the Destination Path. If not specified, it will be set to *C:\Program Files\Telestream\FlipFactory\Debug.*

To import an account into a FlipFactory server using Telnet, follow these steps:

Step 1 Move the account folder or the individual account XML file(s) to the local server that is operating as the FlipFactory group database server or to the FlipFactory server you are going to perform the import into, or place them in a network-accessible share and mount the share on the target server.

Step 2 Log on to the FlipEngine server to execute FlipFactory commands in the command line interface: Open a command window (start > Run) and type `cmd`.

Step 3 In the command window, type `Telnet localhost`. When prompted, type the default account user name `administrator` (or other username if modified) and press Enter. Next, type the password if you have configured the FlipEngine with one. By default there is no password on the administrator account, so just press Enter to log in to the FlipEngine.

Step 4 If you provided the proper credentials, the FlipEngine displays the text "Console ready...".

Step 5 Now, type `import FileName` where FileName is the fully-qualified path and the file that contains the XML-formatted account information; for example: *C:\accounts\demo.XML*.

Figure 10–3. Importing an account via Telnet

Step 6 Type `logout` and press Enter to disconnect from FlipFactory and terminate Telnet.

Step 7 Restart the FlipEngine service and log back onto the FlipFactory console to display the new (or updated) account.

APPENDIX A

Troubleshooting

Use this appendix to identify the symptom you're experiencing with FlipFactory. Follow the suggestions in the right column to identify the potential problem.

Topics

FLIPENGINE

If you contact Customer Service regarding problems with a FlipFactory engine, you should know about the error logs written to engine.log files, and stored (default) in *C:\Program Files\Telestream\FlipFactory.* You may be asked to send one or more engine logs to Telestream for review.

You can also automatically collect all relevant files and send them to Telestream Customer Service by clicking the Email button on the System Settings window (Sending Email to Tech Support (page 6-21)).

PLAYBACK/TRIM EDITOR

On Windows Server 2003, Security Update KB908531 interferes with FlipFactory operations involving various versions of QuickTime. If you are experiencing difficulty with QuickTime-related operations including playback/trim and resubmit/forward, remove Security Update KB908531 and retry.

Under certain conditions related to QuickTime for Java, the playback/trim editor may be unavailable. The playback/trim editor is launched in the Message Viewer window is Playback/Trim tab by clicking the Playback Editor button.

Symptoms include:

- The Playback Editor button in the Message Viewer window's Playback/Trim tab may not display.
- QuickTime may display the QTComponent Missing error window.
- You click on the Playback Editor button and the playback editor never displays, or QuickTime displays an error message.

When this occurs, locate the file *QTJava.zip* in the QuickTime installation directory, usually at *C:\Program Files\QuickTime\QTSystem*.

Place this file in a specific location in the most recent JRE install directory. For instance if you have installed JRE 1.5.0_06, it should be placed at: *C:\Program Files\Java\jre1.5.0_06\lib\ext.*

Specify a Local Store and UNC/Alias

When you need to use the Playback Trim editor, Telestream recommends specifying the destination for the frame-accurate QuickTime product in the Local Store destination. This destination has an Alias URL/UNC item, which you must complete. Select a store, then make sure that the physical location for that store is shared on the computer.

Fill in the alias with a UNC path. For instance, if the *C:\Program Files\Telestream\FlipFactory\http* folder is shared, then set the UNC as

\\computerName\media

This method works reliably under any Java or QuickTime version.

Using HTTP to Server Media

If you must use HTTP to serve media to the Playback Editor, then use the Local Web Server destination and select a store. Under QuickTime 7.2 and Java 1.4.2 (standard FlipFactory install), the Playback Trim editor may not work reliably. It may display the first time, then each time after that it may cause the FlipFactory console to fail.

With Java 1.5 the play editor may operate more reliably.

However, there may be a lengthy delay before the video displays in the window (consider clicking in the window a few times).

If the problem continues, uninstall Quicktime (complete) and reinstall Quicktime from Program Files/Telestream/FlipFactory/Redis. Perform a custom install and when asked which features to install, select all.

TROUBLESHOOTING SYMPTOMS AND PROBABLE CAUSES

Table A-1, Troubleshooting Symptoms and Probable Causes, below provides a list of common symptoms and probable causes to assist you in troubleshooting FlipFactory.

If you are not able to solve the problem with this troubleshooting chart, or require other assistance with FlipFactory, please contact Telestream Technical Support (Support and Information, in About This Guide).

Table A–1. Troubleshooting Symptoms and Probable Causes

Symptom	Probable Causes
I just installed FlipFactory, and it is not working correctly. When I make a new product in a factory, only Duplicate Original is active as a media format.	Verify these common problems are not the source of difficulty: 1. The database has been installed in the proper location, with appropriate permissions. 2. The license file has been placed in /program files/telestream/flipfactory/license/license.dat and you rebooted the server or restarted the service (for details, see Stopping and Starting FlipFactory (page 6-6)). 3. There is only one DAT file in the folder. If you have a copy of a license file, put another suffix on the file. The server and user permissions are set appropriately.
FlipFactory displays an error window “Error communicating with server”, and displays a URL with CGI parameters.	The probable cause is that the server does not have 1GB or more RAM – it may only have 512MB of RAM. FlipFactory requires a minimum of 1GB RAM. Make sure the server has at least 1GB RAM and retry.
My console displays the Cannot display page error when I launch it.	1. Check to see if FlipEngine is started. Display the Services window in the Control Panel. 2. If the FlipEngine is started, determine if HTTP port 9000 is already in use by another application or service. If it is, change the HTTP port number to an unused port number above 9000.

Table A–1. Troubleshooting Symptoms and Probable Causes

Symptom	Probable Causes
FlipFactory displays an error message indicating that this FlipFactory is missing the proper license.	1. Make sure the license.dat file provided by Telestream has been placed in the Program Files\Telestream\FlipFactory\License folder. 2. Re-boot the server or restart the service after installing the license file. 3. You may be attempting to flip your media into a format that is not supported in you license. At the top of the console, click About to display your license capabilities. 4. Make sure there is only one DAT file in the folder. If you have a copy of a license file, put another suffix on the file.
I can't install FlipFactory on my F (or other) drive. I don't have enough space on my C drive.	You can install FlipFactory on any partition you select. However, the installer uses space on the C drive for the installation process. Make sure there is at least 350MB of space on your C drive before installing FlipFactory.
FlipFactory does not display any files when I browse to network locations in console.	Make sure that the FlipEngine is logged in with network permissions. For details, see Accessing Network Resources (page 7-9). Make sure that the target folder is shared.
No encoders are available for my factory.	Make sure the license.dat file provided by Telestream is in the Program Files\Telestream\FlipFactory\License folder. Make sure you reboot after installing the license file, or restart the FlipEngine service (for details, see Stopping and Starting FlipFactory (page 6-6)).

Table A–1. Troubleshooting Symptoms and Probable Causes

Symptom	Probable Causes
Checklist for bad license	Have you renamed the server? Have you moved the server to a new Domain or workgroup? If you were to create a new factory, create a new product what selections do you have under codecs is it only duplicate original that is selectable? If there is any Firewall or Virus protection software, temporarily disable it and restart the FlipEngine service. Navigate to the license file and open it with Notepad. Make a note of the Host ID field: for example, HOSTID=00099bf99c99. Run lmtools.exe in the license folder and display the system settings field. The value in this field must match Host ID value in the license. If you are on a two-NIC server, go to Control Panel > Network Connections and click Advanced > Advanced settings. In Adapters and Bindings, select the second Local Area Connection and move it up, then click OK and rerun lmtools.exe to see if the IDs now match. Next, stop and restart the FlipEngine service to activate the license. If it is the correct license did you stop and restart the FlipEngine service? In Windows Control Panels\Folder Options, go to the view tab and make sure that the Hide extensions for known file types is unchecked. Navigate to the Flip Factory/License folder and check to make sure the license is named license.dat and that it is the only license.dat in that folder. If it is named anything other then license.dat rename it license.dat and restart the FlipEngine service.
When using the Playback/ Trim feature, I get an error message.	Uninstall Quicktime (complete) and reinstall Quicktime from Program Files/Telestream/FlipFactory/Redis. Perform a custom install and when asked which features to install, select all. See Playback/Trim Editor (page A-1)
The Transport Stream missing from encoder list.	VOD Transport Stream replaced MPEG2 Transport Stream. Users with Broadcast module who need Transport Stream need a new license.
When using the MOG license and decoding with the Omneon QuickTime decoder, jobs get stuck at 0%.	Go into the registry and delete the following key: HKEY_CLASSES_ROOT\Media Type\Extensions\.mov. Restart the server and try again.
The AC3 audio in my MPEG1 input media is not encoded. Why not?	When FlipFactory decodes an MPEG1 media stream which contains two audio payloads – MPEG1 audio and AC3 audio – it uses the MPEG1 audio for output. AC3 is only used when it is the only audio stream in the file.
I can't delete FlipFactory Accounts	Be sure to turn off any active monitors before deleting an account.

APPENDIX B

Uninstalling FlipFactory

Use these procedures to uninstall FlipFactory software, and optionally, the FlipFactory database, which permanently destroys the accounts, factories, and job history in the database.

You should uninstall FlipFactory when you are no long using it on a given computer, or when you are upgrading FlipFactory to a newer version.

Topics

REMOVING FLIPFACTORY SOFTWARE

Telestream recommends that you uninstall FlipFactory software when performing an upgrade.

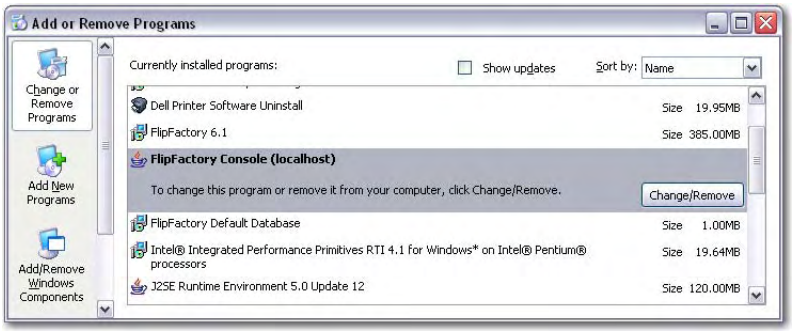
This procedure removes FlipFactory software from your server. It does not remove FlipFactory registry settings or the FlipFactory database itself – which contains FlipFactory accounts, factories, and job history.

To uninstall only FlipFactory software from a server, follow these steps:

Step 1 Open the Control Panel window and open Add/Remove Programs.

Step 2 Select FlipFactory Console.

Figure B–1. Add/Remove Programs control panel



Step 3 Click Change/Remove to permanently remove the FlipFactory Console.

Windows removes the FlipFactory Console from your server.

Step 4 Select FlipFactory and click Remove to permanently remove the FlipFactory software.

Windows removes FlipFactory from your server.

Step 5 If GraphicsFactory has been installed, select GraphicsFactory and click Remove to permanently remove the GraphicsFactory software.

Windows removes GraphicsFactory from your server.

Step 6 Close the Add/Remove Programs window.

Note

The supporting subsystems (IPP, DirectX on Windows 2000, PacketVideo, QuickTime, Java Runtime Environment, and MS SQL Server 2005 Express Edition are not removed. Factories and accounts – stored in the database – plus media you created, are not removed.

Windows removes FlipFactory from the server.

Step 7 In FlipFactory 6.0 or earlier, locate and delete the following directories:

<Install Dir>Program Files\Telestream\FlipFactory\Plugins
<Install Dir>Program Files\Telestream\FlipFactory\backup

In FlipFactory 6.1, these two directories are removed automatically.

REMOVING A FLIPFACTORY 6.0 OR EARLIER DATABASE

Telestream recommends that you only uninstall the FlipFactory database after performing a backup.

This procedure removes the FlipFactory database itself – which contains your FlipFactory accounts, factories, and job history.

Caution

Deleting the default database permanently destroys FlipFactory accounts, factories, and job history.

To uninstall the FlipFactory database from your server, follow these steps:

Step 1 Open the Control Panel window and open Add/Remove Programs.

Step 2 To remove a FlipFactory Version 6.0 or earlier database, select Microsoft SQL Server Desktop Engine (MSSQL$FLIPINSTANCE).

Step 3 Click Change/Remove to permanently remove the FlipFactory database.

Windows removes the database from your server.

Step 4 Close Add/Remove Programs and restart the server.

REMOVING A FLIPFACTORY 6.1 OR EARLIER DATABASE

Telestream recommends that you only uninstall the FlipFactory database after performing a backup.

This procedure removes the FlipFactory database itself – which contains your FlipFactory accounts, factories, and job history.

Caution

Deleting the default database permanently deletes FlipFactory accounts, factories, and job history.

To uninstall the FlipFactory database from the server, follow these steps:

Step 1 Open the Control Panel window and open Add/Remove Programs.

Step 2 Select Microsoft FlipFactory Default Database.

Step 3 Click Change/Remove to permanently remove the FlipFactory database.

Windows removes the database from your server.

Step 4 In Add/Remove Programs, select and remove the following entries:

Microsoft SQL Server 2005

Microsoft SQL Server Native Client

Microsoft SQL Server Setup Support Files

Microsoft SQL Server VSS Writer

Step 5 Close Add/Remove Programs and restart the server.

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