



SCC MediaFactory™ is a multimedia workflow engine for Microsoft Windows operating systems allowing file processing and extraction of metadata from a wide variety of multimedia formats prior to insertion into an SCC MediaServer System. MediaFactory provides sophisticated workflow features such as file routing, distribution and delivery, file transfer by FTP and by email, as well as integration with online web technologies such as RSS, Twitter, Microsoft Azure™ and Reuters Calais™. Any number of processing channels can be stacked together, each executing simultaneously and independently using MediaFactory's sophisticated, multi-threaded software architecture.

Features

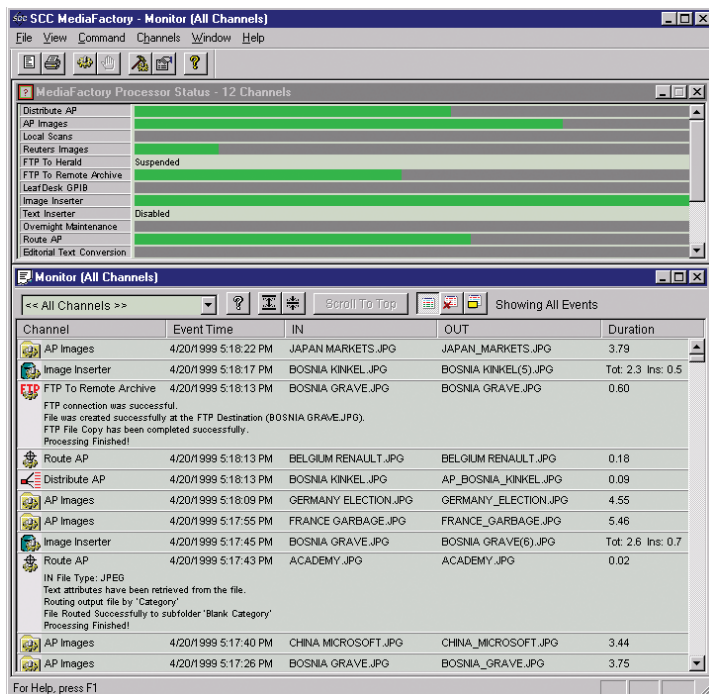
- Supports Microsoft Windows operating systems
- Multi-threaded channel architecture
- Fast, reliable, unattended operation
- Runs as a Service or as a Stand-Alone application
- 'Wait, Process and Delete' or Single Pass modes
- Process subfolder trees with the nested folder feature
- Support for most Raw Digital Camera Formats
- Notification by email in case of error or warning
- Run scripted operations against MediaServer Libraries
- Print custom user-defined proofs
- Crop, Rotate images automatically
- Monitor RSS and/or Twitter feeds for content
- AutoFill metadata attributes with custom values
- Route files automatically to single or multiple destinations
- Send and Receive content via FTP
- Send and Receive content via Email
- File purging by age, number of files, and size of folder/library.
- Detailed log window with color-coded error levels
- Status Window shows current activity with progress bars and history
- and many more...

MediaFactory Channels

The "channel" gives MediaFactory its power and versatility. Each channel represents a port to accept a source of data, a configurable processing task, and a destination port for the processed result. Channels can provide independent dataflow paths, each processing a different source of data and each producing their own output. Alternatively, channels can be chained together, each performing its processing task in sequence on files or data from a single source and resulting in a single output result. Any number of channels can be created, configured and started, all performing their functions simultaneously in separate threads.

Processing can be configured for Single Pass of read-only media, such as a CDROM, or "Wait, Process, and Delete" to create a "watch" folder where files are dropped for immediate and continual processing. Nested folder processing is supported where appropriate. Channels can be configured to stop processing when a certain number of errors are logged consecutively, thereby preventing a long series of errors due to a sudden hardware problem, configuration problem, or similar cause.

Automatic file purging in Output, Done, and Error folders where files accumulate can be configured to delete the oldest files according to a criteria based on age, number of files in the folder, number of MBytes in the folder, or a combination of all three.



Channel processing can be suspended for an arbitrary interval during each 24 hour period or scheduled to occur at certain times of the day and certain days of the week. This feature is useful to ensure that processing does not interfere with overnight backups, and can be used to burst-process files during periods when cost, network traffic, or server load is down.

There are several channel types that can be configured to work separately or together to meet processing requirements. Some channels receive input from files placed in folders and some receive input from a source within an SCC MediaServer database. Similarly, channel output, or results, can be in the form of files in folders or changes to data within a MediaServer database.

Image Conversion / Processing Channel

This channel type can be used to convert from file types such as Adobe PSD, DNG, EPS, IPTC (such as legacy AP LeafDesk and AFP files), JPEG, TIFF, BMP, PNG and most RAW digital camera into Photoshop JPEG or TIFF files with embedded XMP File Info, thumbnail and preview metadata. It can automatically detect the image orientation and rotate/flip the image to its proper state. Images processed by this channel can be automatically printed using a user-defined custom page layout containing any image size, any attribute, and many file and image property variables. This channel can route the file according to a user-defined table between any text attribute value to any subfolder, or can place all output in a single folder or in Daily Folders. This channel will AutoFill attributes, crop and images, and generate multiple resized versions of the original image.

FTP Channel (GET and PUT)

These channels supports FTP and sFTP protocols and performs file transfer operations to or from a mounted input folder to or from any FTP Server accessible via the Internet.

The FTP PUT Channel watches an input folder and performs the transfer operation to the remote server on all files and folders placed in that input folder. The FTP GET Channel watches the remote server and retrieves files to a local folder.

Error handling includes retrying the transfer after a configurable delay, moving the input file to an Error Folder for future re-processing, stopping the channel after a specified number of consecutive errors have occurred.

Send EMAIL Channel

This channel watches an input folder and attaches all files placed there to an email addressed to a list of recipients. The address list can be defined in the Channel Settings or placed in an associated header file along with the file to be sent. Multiple files can be attached to an email when the channel encounters a folder of files.

The email subject and body, to which the file or files are attached, can be formed as a combination of fixed and variable text. The variable text can contain dates, times, recipient information, channel state information, and fields extracted from special header files that accompany the attachment file in the input folder.

Receive EMAIL Channel

This channel connects to an IMAP server and monitors one or pre-configured mailboxes for incoming email messages. When a new email message is received the channel can be configured to extract text content from each message fields and write the resultant file out to disk for subsequent insertion into an SCC MediaServer system. HTML formatted messages can be optionally converted to plain text during this process.

The channel also supports the automatic extraction of message attachments as individual files for individual insertion into the SCC MediaServer system. Sidecar metadata files can be optionally generated for each attachment based on the message field content. Message attachments in zip format can be automatically expanded during this process.

MacBinary Channel

This channel has two modes: Wrap and Unwrap. In Wrap Mode it creates MacBinary files from Macintosh files, combining both the data and resource forks along with the File Type and Creator information. In Unwrap Mode it takes a MacBinary file and creates the appropriate Macintosh file with data and resource forks. This channel can be used to process MacBinary files received from wire services, such as those from the AP Server. It is useful also when paired with an FTP Channel to transfer both forks of a Macintosh file, and restoring the Macintosh file at the other end of the FTP transfer.

A mapping feature is provided to append filename extensions on unwrapped files based on the input file's embedded Macintosh File Creator and File Type values.

Detailed Log

Tasks performed by MediaFactory produce detailed log events. The Log Window displays each log event associated with a single channel or with all channels combined. Each event can be displayed in collapsed format showing the profile of the processing event, or in full expanded format with a complete list of details associated with the processing event. Events levels are 'Successful', 'Warning', 'Error', or 'Informational' and each level is color-coded in the Log Window. Optional email notification can be turned on to notify a list of recipients of any error, warning or specific error events.

Exported Log

MediaFactory can be configured to copy each log event, as it occurs, to any ODBC-compliant database table, including an SQL Server or Oracle table. Once the MediaFactory log entries are in an SQL table, for example, third party applications such as Crystal Reports can be used to view the log, including access to the log via the internet or your intranet. You can also use ASP or the Microsoft SQL Server Web Task feature to automatically create web pages that contain the latest MediaFactory log entries and then place links to these pages on other pages accessible from the internet or your intranet. The contents of these pages are governed by SQL Select statements and can be configured to show all errors, all entries for a channel, or many other display formats, making it easy to monitor the status of MediaFactory, wire services, and MediaServer from a remote site.

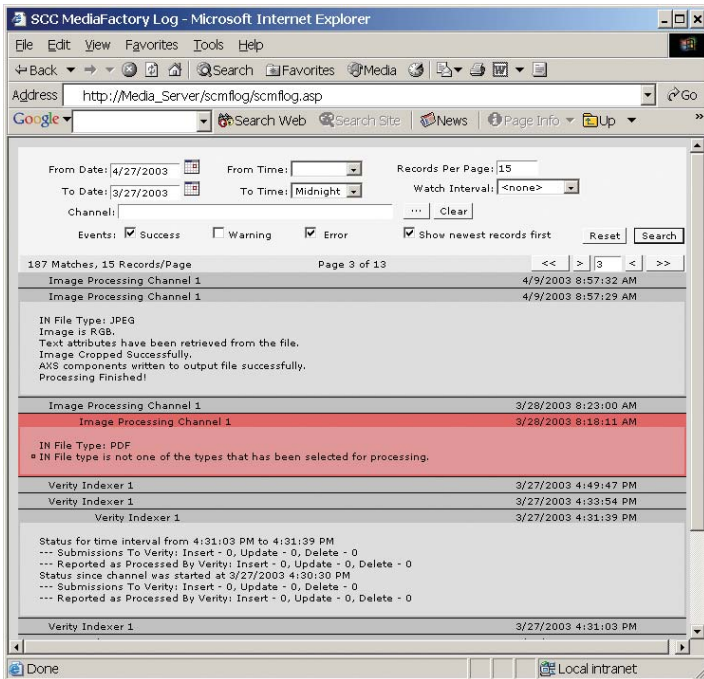
File Routing Channel

This channel performs file routing similar to that in the Image Conversion / Processing channel but does so without modifying the input file. Whereas the Image Processing channel will convert the file first and then route the converted file to a subfolder based on the value of one of its attributes, the File Routing Channel will attempt to extract the attribute value from the input file and simply move that input file to the appropriate subfolder. In addition, this channel is capable of routing files to multiple destinations when using Keyword lists or Supplemental Category lists, or by extracting segments from delimited strings in other IPTC attributes.

Distribution Channel

This channel type has four modes: (1) transfer files to multiple destinations, (2) transfer files to specific destinations based on the type of the file, (3) transfer files from the input folder to one of a group of output folders but only when the output folder contains fewer files than a user-specified number (load balancing) and (4) transfer files from a source folder to a destination folder where both the source and destination are specified explicitly by an XML file placed in the channel's input folder.

Generally, the first mode is used as a starting point into subsequent channels. For example, a Distribution Channel might be used to transfer each file from its input folder to the input folder of multiple channels of other types for specific processing. The second mode is



also useful as a starting point for other channels. In this mode files can be routed by type to specific folders, which themselves are input folders for other channels. Mode (3) is designed as a load balancing mechanism. It will transfer a file from the input folder of the Distribution Channel to the input folder of another channel but only when that destination channel is nearing a state in which it has nothing to do.

MediaServer Library Inserter Channel

This channel is used to insert files into the SCC MediaServer digital asset management system. Supported formats include plain, delimited, CSV, HTML and XML formatted text, News Wire generated IPTC, JPEG, EPS (Vector and Raster), TIFF, GIF, PNG, PSD, DNG, PDF, SWF, MacBinary, Raw Postscript files and most RAW digital camera formats. The channel also supports the insertion of Microsoft Office documents (Word, Powerpoint) including automatic extraction of metadata. Audio/Video formats are also supported via the optional SCC Video support module.

The Inserter Channel initiates action by the Lucene Indexer Channel to ensure that the inserted object metadata is added to MediaServer's Lucene full text index and made searchable immediately. Additional trigger mechanisms are employed to notify SCC client applications that a new object has been inserted into a library so that automatic or dynamic updates can take place. Inserted records can also be added to a MediaServer project based on source metadata content.

MediaServer Text Converter Channel

This channel is used to convert text files from various wire services and other sources to a single, normalized text file format. Once converted, these normalized text files can be inserted into a MediaServer Library using the Inserter Channel.

Most input text formats are supported, including News Wire formatted

IPTC, plain, delimited, CSV, HTML and XML formatted text. The Delimited and CSV text format is a standard used by many applications, such as FileMaker, Excel, and many applications that export tabular data.

Lucene Indexer Channel

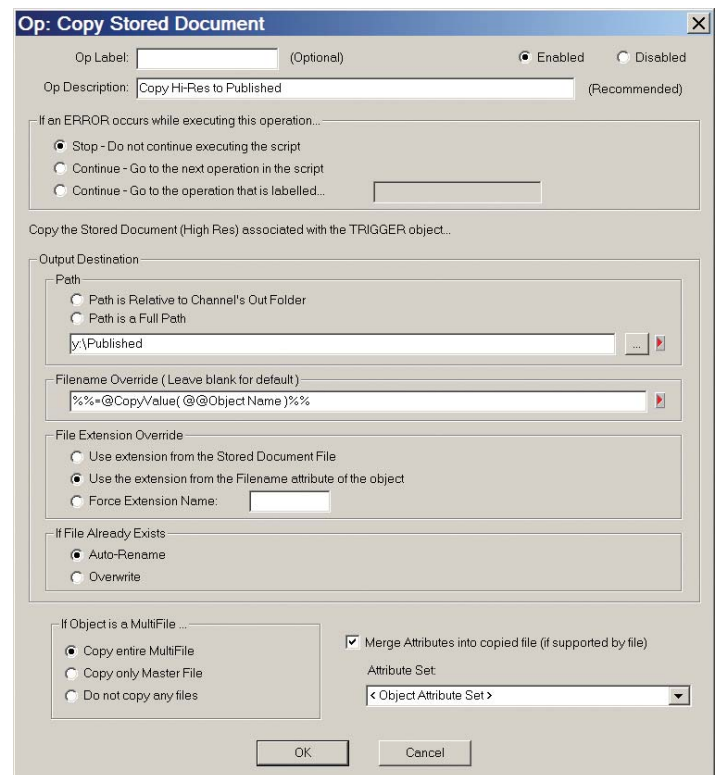
This channel watches one or more MediaServer libraries for changes, additions, and deletions and initiates a complex set of operations to ensure that the MediaServer Lucene full text indexes are updated and that SCC client applications are notified if an index changes that might impact their dynamic views.

ServerOps Channel

This channel performs complex, user-scripted, server-side operations on objects as they are inserted or modified in a MediaServer database. These operations can be performed immediately after insertion or modification, or can be scheduled to execute at any time of the day and on any days of the week.

A simple example of a ServerOps script is to detect when a database object has been added and immediately tag it by AutoFill'ing one of its attributes with a pre-determined value. A second example is to detect when an object has changed, read its attributes, determine if a particular attribute now has a certain value and, if it does, copy the object's associated stored document (inserted file) to a destination folder while AutoFill'ing different values into the attributes of the copied file and the attributes of the object that remains behind in the database library.

The ServerOps Script Editor allows the sequencing of complex and powerful operations, such as AutoFill, Image Rotation, Object Linking, and File Copying. It supports conditional control flow, such





as jumping within the script at execution time depending upon the current value of an attribute from an object, or jumping to a point in the script because an error was encountered while executing. Scripts support multiple attribute sets, so that an attribute set can be extracted from an object, cloned to another set, and subsequently modified without affecting the cloned set. Scripts can check and set the value of text, date, and numeric variables, which can be used to modify attribute values or control the flow of the script.

Scripts support parent-child relationships between objects. As a script is executing over one object (the parent) it can initiate the execution of another script over the set of objects that match the first object in a specific way (the children). For example, the children of an object might be all objects in the same or other MediaServer libraries that have the same value for the attribute Edition. The parent script could start the execution of the child script which would then operate over each of the child objects. After the child script completes, the parent script continues.

Delivery Channel

The SCC MediaServer Delivery Module enables automated delivery of documents stored within an SCC MediaServer system and supports multiple destinations each configured with a time to send, an output format and an output location (e.g. print queue, network directory, FTP site or Email address). This channel is a central component of the SCC MediaServer Delivery Module.

MediaServer Maintenance Channel

This channel simplifies SCC MediaServer overnight maintenance and optimization setup. Library maintenance functions include Lucene index optimization, deleting the oldest, unprotected records from a library, purging deleted records, rebuilding the SQL Table Indexes, and making a backup copy of the Lucene search indexes. The Maintenance Channel can be configured to start execution at any time, usually during the early morning hours, and to stop prior to completion if the functions cannot be completed in a specific time.

All actual work scheduled by the Maintenance Channel is performed server-side, and as a result if MediaFactory is running on a remote machine there is very little interaction between the server and that client while the maintenance operations are executed. Any errors and completion notifications that result from Maintenance channel execution are subsequently passed back to MediaFactory and displayed in the Log Window as an event for the Maintenance Channel. Error events are displayed in red and success events are displayed in light green, as usual with MediaFactory. Error events can be configured to trigger an email to all in an email recipient list.

ObjectML/NewsML Channels

The ObjectML/NewsML Channels provides the interface engine for the SCC MediaServer ObjectML/NewsML Module. It processes export packages from ObjectML/NewsML-equipped editorial systems, such as the CCI Editorial System.

Additional Features

MediaFactory provides many powerful functions and facilities that support channel operations with flexible tools to solve difficult file

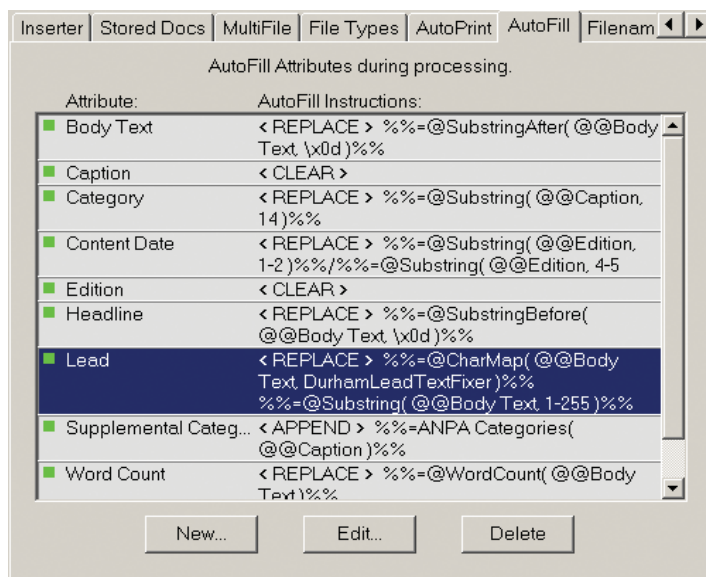
processing and handling problems. This includes Value Translators, Character Mappers, Routing Schemes and AutoFill and advanced filename handling functionality.

A Value Translator is a user-defined table of text that is used by MediaFactory to map any attribute from one value to another (e.g. replacing 'DN' to 'Daily News').

Character Mappers filter the text of one or more metadata attributes to find and replace characters or sequences of characters with alternate and preferred values.

Routing Schemes are used to establish destinations, folders, and projects or library fields, based on the value of metadata attributes.

AutoFill is used to set attributes to fixed, evaluated, or scripted values, including values containing date and time information, channel state information, database state information, unique numbers, the values of other attributes, word counts, substrings, value translations, and more. Attributes are filled based on an AutoFill Instruction, which itself can be composed of multiple sub-instructions. The sub-instructions are evaluated in sequence to produce a resulting value in a flexible, programmatic style.



In addition AutoFill also incorporates advanced mechanisms such as XPath for advanced parsing of XML formatted files, and Regular Expressions allowing advanced pattern matching, enhancement and replacement.

The advanced filename handling mechanism built into MediaFactory allows filenames to be read that would otherwise be illegal on the Windows platform (such as filenames ending in a space or ellipsis) which can occur when files are sourced from other platforms. Almost all Windows programs will “choke” on those files, but MediaFactory will read them, process them, and fix the name at the output.

MediaFactory will also automatically increment filenames when files with the same already exist, thereby preventing the unintentional overwrite of these files.