I. FaxCore File Gateways Overview

The FaxCore File Gateways provide a simple yet powerful framework that is capable of converting various types of files into outbound faxes (messages). The framework provides the mechanisms to define an unlimited number of independent gateways, each of which contains a specification for the type of file(s) being processed, and how the files are converted into faxes. A gateway specification consists of the following information:

- Processing Directories – the directory that a gateway will monitor for new files, plus, a set of directories that the gateway will use for processing the files (temp, exception, etc).
- Gateway Profile – a set of parameters that control how the files in the processing directories will be interpreted and mapped into FaxCore messages.

The gateway framework natively supports the file structures listed below. It can also be enhanced using the FaxCore SDK to support any other custom file structures.

- *Control Files* – The specification of the message meta-data including recipient addresses, recipient names, priority, etc is stored in a text file, while the documents for the message are stored in separate image files (tiff, PDF) or application files (doc, xls, etc).
- *Embedded Codes* – The specification of the message meta-data is stored as escaped text sequences embedded in the actual document that is being sent. In order for the document to be parsed successfully, the document must be a text type such as PCL, txt, rtf, etc, or a binary file (PDF, etc) with the embedded codes as a text stream at the beginning of the file.

FaxCore ships with the following pre-configured gateway specifications that are ready to be activated. Additional formats can also be created if needed.

- HP Digital Sender – supports fax control files generated from the HP Digital Sender printers.
- FaxCore Control File – supports fax control files that are in FaxCore control file format.
- Facsys Embedded Codes – supports the set of escape codes used by Facsys embedded code files.
- FCL Embedded Codes –supports the set of escape codes used by Host Fax and Commerce Path.

Note: You can define an unlimited number of Gateway Profiles for each type of gateway. For example, you may have 2 HP Digital Senders in your organization – and consequently, set up 2 sets of processing directories and profiles – one for each device.

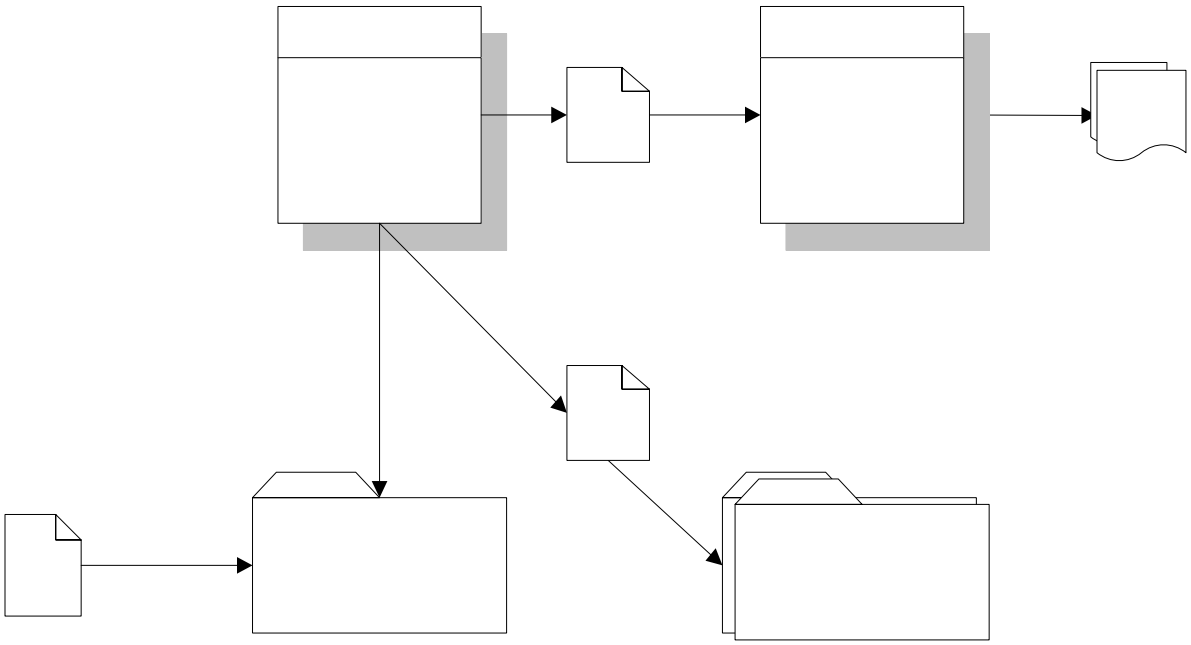
II. Understanding How Gateway Files are Processed

Processing files for a gateway involves all of the following components:

- **FaxCore Directory Monitor** – a simple directory monitor that monitors the gateway inbox directory for new files to be processed, and hands off the files to the appropriate Gateway File Processor.
- **Gateway File Processor** – the actual component that processes a single file and converts the file into outbound FaxCore messages. There are different processors for different file structures.

- **Configuration Files** – one of more configuration files that are used to enable the gateway and define the gateway specification.
- **Gateway Processing Directories** –FaxCore uses a simple directory structure to control processing of the files. By default, the directories for a gateway are set up in the following relative locations where <gatewayName> is the corresponding gateway (E.g.: HPDS):
    - /Faxcore/data/xgateway/<gatewayName>/inbox –the inbox directory where applications dump the files they want converted into outbound faxes.
    - /Faxcore/data/xgateway/<gatewayName>/complete – files that are successfully processed are moved to this directory.
    - /Faxcore/data/xgateway/<gatewayName>/exception – files that fail processing due to an unexpected error or bad configuration are moved to this directory.
    - /Faxcore/data/xgateway/<gatewayName>/unauthorized – files that cannot be mapped to a valid FaxCore user are moved to this directory.
    - /Faxcore/data/xgateway/<gatewayName>/temp – location for temporary files used in processing.

The diagram below shows the steps involved in processing a file.



Step 1: the file is dumped into the inbox directory from an external application.

Step 2: the directory monitor periodically polls the inbox directory for new files. The location of the inbox and processing directories is controlled by settings in the configuration files (see Configuring The File Gateways).

Step 3: when a file is encountered in the inbox directory, the directory monitor locks the file and hands it off to the appropriate file processor.

3 - p

Step 4: the file processor parses the file and creates one or more FaxCore outbound messages accordingly. The mapping of the properties and codes in the file to the FaxCore messages is controlled by settings in the configuration files.

Step 5: once processing of the file is complete, the directory monitor moves the file (and associated files) into the appropriate processing directory. In addition to moving the files, the directory monitor writes a log file in xml format, and places it alongside the original file. The log file is named the same name as the original file, with an ".xml" extension appended to the end of the file name (see the Monitoring section below).

III. Understanding the Directory Monitor

The Directory Monitor is a file based implementation of a FaxCore work queue. Just like other FaxCore work queues, it supports retry logic, delay intervals, and detailed logging.

The directory monitor is actually an agent that runs through the FaxCore Dispatcher. It is configured as a web request (url) that is repeatedly invoked at specified intervals by the dispatcher. Each invocation of the web request will process 1 file from the inbox directory. The logic to read the inbox directory and hand off a file for processing is actually invoked from within the web page. This makes it possible to test the gateway before enabling it by using simple web page invocations.

The directory monitor uses a simple and readable file naming convention to keep track of the number of times a file has been attempted to be processed, and the delay between attempts. The format of the file name is as follows:

<attemptNumber><readyDateTime>_<originalFileName>

where:

- <attemptNumber> is the last attempt number
- <readyDateTime> is the next time the file is available to be processed in the format yyyyMMdd.HHmmss
- <originalFileName> is the original name of the file.

For example, for a file that is originally names *faxRequest_10.txt*, after the first attempt to process the file, the name would be changed to something like

_1_20020525.143544_faxRequest_10.txt

The naming convention is retained throughout the life of the file, even after processing completes and it is moved to the appropriate processing directory (complete, exception, unauthorized).

IV. Monitoring the File Gateways

Monitoring a file gateway is broken into two categories:

- **Gateway Activity Monitoring:** Gateway activity can be monitored by simply monitoring the inbox and processing directories associated with each gateway.
- **File Processing Log:** Each file that is processed by the gateway has two corresponding logs.
    - *Result File Log* – the xml file that is written alongside the original file once processing is complete. This file contains a simple xml structure that contains information about the status of the file:

```
<result>
    <success>true or false</success>
    <code>result code (0 for success)</code>
    <info>result message</info>
    <extendedInfo>detail error /log info</extendedInfo>
</result>
```

    - *Activity Log* – Detailed log and trace messages stored in database log tables. The activity log can be viewed by administrators from the *SEARCH* menu by selecting the "*workflow activity*" search option. There are 2 queues that correspond to the file gateways:
        - *control file gateway* – this includes all of the control file gateways including the HP Digital Sender and the FaxCore Control File.
        - *embedded codes gateway* – this includes all the embedded codes gateways including the HostfaxCodes, and the FacSys embedded codes gateways.

V. Configuring the File Gateways

This section explains the how to configure and enable a file gateway. Detailed information about the functionality of specific gateways can be found in Appendix A at the end of this document.

In the instructions below, the name of the gateway is referenced as: <gatewayName>. When performing the steps, substitute the appropriate value for this parameter.

Configuring and enabling a gateway is a 3 step process.

Step 1: Configure a profile for a file gateway

Configuration settings for each file gateway are located in the **axBootstrap.ini** file at the root directory of the FaxCore installation. Each set or processing directories must have its own section (profile) in the ini file.

The following parameters can be configured for each gateway profile:

Parameter	Description	Required
baseDirectory	The full path to the root directory where the processing directories will get created. The directory monitor will create the following directories underneath the baseDirectory: complete, exception, unauthorized, temp	Yes
inboxDirectory	The full path to the inbox directory where files are placed to be processed. May contain UNC directories.	Yes
inboxControlFileMask	The file mask indicating the files the directory monitor should scan for processing.	Yes for control file gateways
defaultUserName	The default FaxCore user to assign to created messages. Every message in FaxCore must be owned by a FaxCore user account. This parameter can be used to allow "anonymous" files to be processed in the event that the user account is not specified directly in the file. The value of this parameter should be the username that is used for logging into the FaxCore server.	No
allowAnonymousUsers	Indicates that FaxCore should try to use the defaultUserName even if a username is specified in the file – but can't be authenticated. By default (if this is set to 0), if a username is specified in the file, but it does not exist in FaxCore, the gateway processor with throw an Unauthorized error.	No – Default=0
userNamePrefix	Indicates a prefix that prefixes any username field. FaxCore will strip off this prefix before identifying the FaxCore user.	No
inputFileType	The type of files (extension) that are being placed in the inbox directory. Used by some gateways to determine the type of file when the extension is not included in the file name.	No
isInputFileBinary	Specify 1 if the input file type is in binary format, and 0 is the input file type is text.	Yes
binaryDataStartInd	For Embedded Codes binary files, specify the text string that indicates the start of the binary data, and the end of the embedded codes. For PDF, this is usually: %PDF	Yes for binary code files
dateFormat	The format for any date fields that are encountered in the files.	No
faxAsRaw	Determines whether to treat all fax numbers as raw number. Raw numbers will not be parsed and normalized by the FaxCore parsers. Set to 1 to treat as raw, or 0 to have FaxCore parse the numbers.	No – Default = 0
includeDefaultSenderNotifications	Indicates if FaxCore should include the default notifications set up in the FaxCore user profile.	Yes. Default = 0
includeDefaultCoverPages	Indicates if FaxCore should include the default cover page(s) set up in the FaxCore user profile.	Yes. Default = 0
Notifications	Delimited list of any notifications that should be applied to all messages created by the gateway.	No

maxAttempts	The maximum attempts to try to process a single file.	Yes
attemptIntervalSec	Delay in seconds between each attempt.	Yes

Step 2: Enable the Directory Monitor

The Directory Monitor is invoked through the FaxCore Dispatcher service. The dispatcher is configured in the axDispatcher.ini file at the root directory of the FaxCore installation. To enable automatic processing of a gateway, you must add the corresponding entries to the FaxCore Dispatcher so that it is aware of the gateways to monitor. To add a gateway with the name <gatewayName> to the Dispatcher, perform the following:

- Find the section in the axDispatcher.ini file that lists the queues that the Dispatcher is processing: [workAgents]

- If an entry for your gateway does not already exist, then add a line at the end of this section in the format

  99=faxcoreQueueGateway<gatewayName>

  Where 99 is the next corresponding number in the queue list.

- Add a section in the ini file for the specification of the queue that you just defined. This tells the dispatcher the processing URL to invoke to process the files in the gateway, as well as the profile to use from the axBootstrap.ini file.

  ```
  [faxcoreQueueGateway<gatewayName>]
  enabled=0
  profile=workAgentProfile
  urlPath=/apps/webService/<gatewayProcessingUrl>
  queryString=xProfile=gateway-<gatewayName>
  threadSleepInterval=1000
  debug=0
  ```

  The parameter definitions are as follows:

  - **enabled** = set to 1 for automatic processing of the files
  - **profile** = should always be set to *workAgentProfile*
  - **urlPath** = the url that the dispatcher will invoke to process the files – where <gatewayProcessingUrl> is one of the following:
    - hpDigitalSenderGateway.aspx
    - controlFileGateway.aspx
    - hostfaxCodesGateway.aspx
    - embeddedCodesGateway.aspx
  - **queryString** = the query string to add to the urlPath where <gatewayName> is the name of your gateway. This should correspond to the profile (section) name in the axBootstrap.ini file.
  - **threadSleepInterval** = the time in milliseconds to wait between processing attempts.
  - **debug** = set to 1 to generate debugging information if requested by your FaxCore support representative.

- For Example, to configure a control file gateway for faxcore control file format with the name *myGateway*, the corresponding entries would be as follows:

axBootstrap.ini file

```
[gateway-myGateway]
baseDirectory=c:/faxCore/data/xgateway/myGateway
inboxDirectory=c:/faxCore/data/xgateway/myGateway/inbox
inboxControlFileMask=*.ctl
allowAnonymousUsers=1
defaultUserName=em-codes
userNamePrefix=
inputFileType=TIF
dateFormat=MM/dd/yyHH:mm
faxAsRaw=1
includeDefaultSenderNotifications=0
includeDefaultCoverPages=0
notifications=
maxAttempts=2
attemptIntervalSec=30
```

axDispatcher.ini file

```
[queues]
15=faxcoreQueueGatewayMyGateway

[faxcoreQueueGatewayMyGateway]
enabled=1
profile=workAgentProfile
urlPath=/apps/webService/controlFileGateway.aspx
queryString=xProfile=gateway-myGateway
threadSleepInterval=1000
debug=0
```

Step 3: Restart the FaxCore Dispatcher

The FaxCore Dispatcher must be restarted in order to pick up the changes made in step 2 above. The FaxCore Dispatcher can be restarted using one of the following methods:

- Restart the FaxCore.Dispatcher service using Windows 2000 Service Control Manager.
- Restart the FaxCore.Dispatcher service from the Network section of the FaxCore administration console.

VI. Defining a new Gateway Specification

The process of defining a new gateway specification consists of creating and modifying various FaxCore configuration files, and possibly database meta-data. Please contact FaxCore technical support for help with creating new gateway specifications

VIII. Appendix A. Gateway Specifications

FaxCore Control File Gateways

The FaxCore control file gateway uses *name=value* style format. The following fields can be specified in the control file:

The following fields should be specified once.

Field Name	Description	Data Type	Required
subject	Subject of the message. Used by cover pages.	String	no
notes	Notes of the message. Used by cover pages.	String	no
trackingKey	Tracking key that can be used to track the message.	String	no
priority	Priority that the request will get processed.	Integer	no
senderName	Sender name. Used by cover pages.	String	no
senderCompany	Sender company. Used by cover pages.	String	no
senderAddress	Sender fax, phone, or email address. Used by cover pages	String	no
billingCode	Billing code to associate with the request. Used in billing reports.	String	No
coverPageName	Name of the FaxCore stored cover page (case sensitive) to use for the fax.	String	no
userName	The FaxCore username with which to send the message. The profile set up for the FaxCore user will be used in the general processing of the fax.	String	Yes if a defaultUserName is not specified in the profile.
nocover	Indicates to not use any cover page, even if specified by the FaxCore user profile. Set to 1 to omit cover pages.	Integer	no

The following fields can be specified multiple times.

Field Name	Description	Data Type	Required
recipientName	Recipient name. Used by cover pages.	String	no
recipientCompany	Recipient company. Used by cover pages.	String	no
recipientAddress	Recipient fax number	String	yes
filename	Relative path of the associated document or image (tif/pdf) file. Can specify multiple filenames fields.	String	yes
notification	A notification to attach to the message.	String	no

The following is a sample of a control file that will create a single message with 4 fax deliveries:

```
filename=testFax.tif

subject=Test Subject
notes=Test Notes
trackingKey=T12345
nocover=1

senderName=Joe Smith
senderCompany=BEI
senderAddress=18583622640

recipientName=John Smith
recipientCompany=FaxCore
recipientAddress=18665551111

recipientName=Jim Smith
recipientCompany=FaxCore
recipientAddress=18665552222

recipientAddress=18665553333
recipientAddress=18665554444
```