Integrating Outbound Fax Services with Epic Print Service

Epic Print Service

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Table of Contents

Overview

Many Epic community members use the Epic Print Service (EPS) to fax documents generated by various applications from their instance of Epic. However, EPS is not capable of sending faxes directly and relies on integrations with fax management systems to send these faxes.

Starting in the May 2019 release, Epic integrates with fax management systems using the outbound faxing web service. This web service is used in addition to existing integrations but includes all of the features of the existing integrations.

This document provides third-party fax management system vendors with information about how to use the EPS outbound faxing web service to integrate with EPS. The steps in this document, including the Epic configuration requirements, generally apply to all Epic community members that use the May 2019 version of Epic or a later version.

Formatting for Fax Transfer Calls to External Systems

When a user generates a fax job within Epic, that fax is typically sent to EPS. These fax jobs can be configured to send the fax using the outbound faxing web service. At a high level, this will send an HTTP request to the web service with two parts:

1. **Metadata:** The HTTP request contains metadata about the job, such as the fax number that the job should be sent to. This metadata is an XML object that contains several important fields and several fields useful for reporting. Some of this information may be necessary later on, such as the Status Update URL, which will be useful for a status update into Epic.
2. **Attachments:** The subsequent part of the HTTP request is the data for the print job. This is the document that should be faxed as defined in the metadata object. These documents can be very large depending on the print job. Sizes in excess of 20 megabytes are possible and should be handled carefully.

After the job transfer request has been received, the output management system should send back an HTTP 200 OK message. In the event that there is a transfer or processing failure, returning an HTTP error code will result in the job being logged as a failure in Epic. It is not necessary to wait until the job has successfully faxed to send back a response to EPS. The job status update APIs should be used for sending back notifications of printing failures. The URL for the job status update API will be included in the request.

After a response is sent, the status in Epic will be “Processing on Fax Server” or “Completed,” depending on the configuration in Epic. If the fax management system is not capable of sending status feedback to Epic through one of the job status update APIs, this should be configured to “Completed.” If the fax management system is capable of sending back status feedback via the status update APIs, it should be configured to “Processing on Fax Server.” Epic organizations will set this configuration option in their standard configuration tools when they upgrade to the May 2019 version of Epic.

Handling Large Documents

One of the important properties of the API is that all requests are sent using a chunked transfer encoding, which allows requests to be streamed directly to and from the disk. Because the sent PDF documents can be extremely large, it's important to account for memory limitations on these documents, often imposed by web servers. EPS is capable of sending any document over the output API, and third-party output management systems should also support receiving documents of any size.

Formatting for Job Transfer HTTP Requests

The HTTP request is structured as a multipart HTTP request. The first part is the XML metadata object, , and the second part is the print job's data, both of which are further defined below.

Relevant HTTP Headers

Content-Type: "multipart/related"

Transfer-Encoding: Chunked

First Part (Metadata)

Content-Type: "text/xml"

Subsequent Parts (Data)

Content-Type: "application/pdf" or not specified

Content-Disposition: attachment; filename="file name of attachment"

Formatting for Job Transfer Metadata Objects

Metadata

The first part of the request is Metadata in XML format, consisting of the following fields:

Property Name	Datatype	Description
Common	Common	The most common data sent. Most faxes sent will have basic support for these fields.
Advanced	Advanced	Additional categorized information that may be sent along with the fax. This includes some contextual information that may not be applicable to all faxes sent.
Extensible	Extensible	Uncategorized custom values.

Common

Property Name	Datatype	Description
FaxNumber	String	The fax number to send to, as a string.
RecipientName	String	The full name of the recipient.

Property Name	Datatype	Description
AddCoverSheet	Boolean	If set to yes or no, will request a cover sheet to be included with the fax. If not specified, the receiver of the API may decide whether or not to include a cover sheet with the fax.
UseHighQuality	Boolean	1 for high quality (200 DPI) or 0 for low quality (100 DPI).
CoverSheetSubject	String	The subject to include on the cover sheet.
SenderName	String	The full name of the sender.
SendingUser	String	The username of the account to associate with this transaction on the fax server
CoverSheetNotes	String	Notes to include on the cover sheet.
ScenarioID	String	The scenario category number of the job, which helps define what type of content is being printed.
ScenarioName	String	The scenario name of the job, which helps define what type of content is being printed, such as "Printing Test Page".
EpicUserID	String	The Epic identifier of the user that printed the job.
EpicUserName	String	The Epic username of the user that printed the job.
UserAccount	String	The external authentication username of the user that printed the job.
UserDomain	String	The external authentication domain of the user that printed the job.
EpicVersion	String	The version of Epic that the job originated from.
JobID	String	A globally unique identifier for this print job. Used to identify the job inside of Epic, and necessary for sending back an updated print job status.
EnvironmentName	String	Epic's name of the database environment that the job originated from. Necessary for sending back an updated print job status.
StatusUpdateURL	String	The response URL to use for sending status update responses for the job. The API for this URL is described here: https://apporchard.epic.com/Sandbox/Index?api=506
Attachments	List<Attachment>	The list of attachments included with this fax.

Attachment

Attachments are numerically tagged to maintain order.

Property Name	Datatype	Description
Name	String	The file name of the attachment. This may be useful in determining how to process the file.
ID	Integer	The unique identifier for the attachment. Attachments are sent in numerical order from smallest to largest.

Advanced

Property Name	Datatype	Description
Data	List<AdvancedFaxData>	Collection of advanced fax data.

AdvancedFaxData

Advanced fax data is organized into categories that have a unique StringKey and NumericKey.

Property Name	Datatype	Description
StringKey	String	The unique string identifier for the data.
NumericKey	Integer	The unique numeric identifier for the data.
Value	String	The value of the data

The possible categories that can be sent are listed below. A particular fax may contain all, none, or any combination of these categories, but each category can appear once at most.

StringKey	NumericKey	Description
PatientCSN	1	The contact serial number of the patient encounter associated with this document
PatientName	2	The full name of the patient associated with this document
DateTimeSent	3	The date time string of when the report content was generated, localized to the Epic database server.
NoteID	4	The identifier of the note associated with this document (HNO ID)
NoteType	5	The type of note associated with this document (presented as a title of a category in I HNO 34033)
PatientMRN	6	The medical record number of the patient associated with this document
PatientIDType	7	The identifier type of the medical record number
PatientZIPCode	8	The ZIP code of the patient
IsAdHocCommunication	9	True if this communication has a well-defined recipient and False otherwise
RecipientINI	10	The Epic master file used to identify the recipient
RecipientID	11	The identifier of the recipient
RecipientIDType	12	The type of identifier of the recipient

StringKey	NumericKey	Description
DocumentOrigin	13	The method used to create this document (presented as a title of a category in I EPT 19766)
PatientLegalSex	21	The legal sex of the patient associated with this document
PatientDateOfBirth	22	The date of birth of the patient associated with this document
PatientEnterpriseNumber	23	The Enterprise identifier of the patient associated with this document
CoverPage	24	The cover page template to use for this fax
RecipientName	100	The full name of the recipient of the fax
RecipientFirstName	101	The first (given) name of the recipient of the fax
RecipientLastName	102	The last name (surname) of the recipient of the fax
RecipientTitle	103	The title of the recipient of the fax
RecipientCompany	106	The company of the recipient of the fax
RecipientPhone	110	The voice phone number of the recipient of the fax
RecipientEmail	111	The e-mail address of the recipient of the fax
RecipientBillingCode	112	The billing code associated with the recipient of the fax
RecipientSubBillingCode	113	The sub billing code associated with the recipient of the fax
RecipientAccount	114	The account associated with the recipient of the fax
RecipientAddressWhole	120	The address of the recipient of the fax. This may contain multiple lines separated by a newline character (\n)
RecipientStreet	121	The street address of the recipient of the fax
RecipientCity	122	The city of the address of the recipient of the fax
RecipientIZIPCode	123	The ZIP code of the address of the recipient of the fax
RecipientState	124	The state of the address of the recipient of the fax
RecipeintCityState	125	The city and state of the address of the recipient of the fax
RecipientCounty	126	The county of the recipient of the fax
RecipientCountry	127	The country of the recipient of the fax
SenderName	200	The full name of the sender of the fax
SenderFirstName	201	The first (given) name of the sender of the fax
SenderLastName	202	The last name (surname) of the sender of the fax
SenderTitle	203	The title of the sender of the fax
SenderDepartment	204	The name of the department associated with the sender of the fax
SenderLocation	205	The hospital location of the sender of the fax
SenderCompany	206	The company name of the sender of the fax
SenderDepartmentPhone	207	The voice phone number of the department associated with the sender of the fax
SenderDepartmentFax	208	The fax phone number of the department associated with the sender of the fax
SenderServiceArea	209	The hospital service area of the sender of the fax

StringKey	NumericKey	Description
SenderPhone	210	The voice phone number associated with the sender of the fax
SenderEmail	211	The e-mail associated with the sender of the fax
SenderFax	212	The fax phone number associated with the sender of the fax
SenderAddressWhole	220	The address of the sender of the fax. This may contain multiple lines separated by a newline character (\n)
SenderStreet	221	The street address of the sender of the fax
SenderCity	222	The city of the address of the sender of the fax
SenderZIPCode	223	The ZIP code of the address of the sender of the fax
SenderState	224	The state of the address of the sender of the fax
SenderCityState	225	The city and state of the address of the sender of the fax
SenderCounty	226	The county of the sender of the fax
SenderCountry	227	The country of the sender of the fax

Extensible

Property Name	Datatype	Description
Data	List<ExtensibleFaxData>	Collection of extensible fax data

ExtensibleFaxData

Extensible fax data is custom data that is identified with a unique Key.

Property Name	Datatype	Description
Key	String	The unique identifier for the data
Value	String	The value of the data

Sample Requests

Job Transfer Request

Note: The transfer encoding is chunked, but the chunked markers have been removed for readability.

```
POST http://nest11:55001/api/GenericFaxTesting/SendFax HTTP/1.1
Authorization: Basic XXXXXXXX
Content-Type: multipart/related; boundary="e6990535-a21e-4354-87c8-c578e47715e4"
Host: nest11:55001
Transfer-Encoding: chunked

--e6990535-a21e-4354-87c8-c578e47715e4

Content-Type: text/xml; charset=utf-8

<?xml version="1.0" encoding="utf-8"?>
<Metadata xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <Common>
    <FaxNumber>6087771234</FaxNumber>
    <RecipientName>Recipient Test</RecipientName>
    <AddCoverSheet xsi:nil="true" />
    <UseHighQuality xsi:nil="true" />
    <SenderName>Test Sender</SenderName>
    <SendingUser>epicsys</SendingUser>
    <CoverSheetNotes>This is a test fax.</CoverSheetNotes>
    <ScenarioID>1</ScenarioID>
    <ScenarioName>Printing Test Page</ScenarioName>
    <EpicUserID>12345</EpicUserID>
    <EpicUserName>USER, PRINTER</EpicUserName>
    <UserAccount />
    <UserDomain />
    <EpicVersion>0</EpicVersion>
    <JobID>8EEA79BBD77C49DE828A554268683AA4</JobID>
    <EnvironmentName>idecur</EnvironmentName>
    <StatusUpdateURL>
      http://responseendpoint:55001/api/UpdatePrintJobStatus
    </StatusUpdateURL>
    <Attachments>
      <Attachment ID="1">8EEA79BBD77C49DE828A554268683AA4.pdf</Attachment>
      <Attachment ID="2">Supplemental Data _g5jt1w5pdqn.pdf</Attachment>
    </Attachments>
  </Common>
  <Advanced>
    <Data StringKey="NoteID" NumericKey="4">123456789</Data>
  </Advanced>
  <Extensible>
    <Data Key=”customValue”>Testing</Data>
  </Extensible>
</Metadata>

--e6990535-a21e-4354-87c8-c578e47715e4

Content-Type: application/pdf
Content-Disposition: attachment; filename=63B843D3F5B14F11ACD189A370287979.pdf

%PDF-1.4
```

```
%
1 0 obj
...
startxref
40224
%%EOF

--e6990535-a21e-4354-87c8-c578e47715e4

Content-Type: application/pdf
Content-Disposition: attachment; filename="Supplemental Data_g5jt1w5pdqn.pdf"

%PDF-1.4
%
1 0 obj
...
startxref
40224
%%EOF
```