CONCORD TECHNOLOGIES

Concord Fax | Getting started with Web Services

Getting Started

Thank you for your interest in Concord's Cloud Fax Web Services APIs! We are thrilled to know that you want to take advantage of Concord's fax platform, but we understand you may be concerned about the effort required to use Concord's Web Services. As you would expect, the Concord Fax Web Services APIs are robust, secure and feature-rich, but they are easy to use as well! This brief document will help you get started and in just a short while, you will be able to automate your application to send a fax, see the results of your sent fax, and receive an inbound fax.

Requirements

Step 1: Register for access to the Concord Developers Portal
The Concord Developer Portal was specifically designed for users like you, who are looking to integrate applications with Concord Fax. The Developer Portal offers detailed documentation on all supported API methods, as well as high-level guidance and a best-practice framework. The portal also includes sample code for ASP, JSP, C/C++, Java, VB, .NET, C# and PHP. It contains a vast library of simple-to-use utilities to facilitate rapid integration and support from Concord's team of developers and architects.

Step 2: Obtain a Concord Account
This can be accomplished by contacting your Concord sales representative. If you do not have a Concord sales representative, please contact sales@concord.net to gain access to Concord services.

Step 3: Choose your interface
Concord offers multiple interfaces to integrate your applications with Concord's outbound and inbound faxing services. In this document we will review the following:

- Outbound Fax Web Service Interface
- Delivery Status Push Notification Interface
- Inbound Web Service Interface
- Inbound HTTP Push Interface

Factors to consider when deciding which interface to use should include: simplicity, development availability and expertise, features, security, and more. Additional information on each interface and considerations when choosing can be found on the Concord Developer Portal.

Step 4: Ensure Connectivity and Development Environment
The Fax Webservices Interfaces require HTTPS access through port 443. As you would expect, a development environment that supports web services is required.

Ready, Set, Fax!

Now that you are ready to begin your development, you will see just how simple it is to utilize Concord's extensive API suite. We have chosen to display the syntax of the examples in this document in C#. All of the examples provided, plus many more, are available on the Concord Developer Portal.

Send a Fax

Sending a fax is very simple. When sending a fax, there are a few methods to choose from, some of which provide additional functionality. All methods to send a fax can be found on the Developer Portal under Outbound Fax Delivery. Below is a brief outline of these methods, and the functionality supported by each.

Method	Description
SendFax	Used to send 1 or more files to 1 or more recipients.
SendFaxEx	In addition to all the functionality offered in SendFax, includes: -Scheduling the delivery -Override default Cover Page settings -Override default notification settings -Identify each job with a customer provided ReferenceId and 11 other custom fields for enhanced reporting.
SimpleSendFax	The absolute simplest method. Used to send a single Tiff file to a single recipient

As the below example illustrates, it is very easy to submit a fax.

C#

```
bool SendFax(
string  UserID,
string strPIN,
FaxJobRecipient [] Recipients,
FaxJobFile [] FaxJobFiles,
out FaxJobId [] FaxJobIds,
out long TTFP,
out WSError WSError
```

To submit, you will need to include:

- Credentials for authentication
- Fax recipients
- FaxJobFiles (document(s) to be sent as fax pages)

In return you will receive:

- FaxJobID (1 per recipient)
- Estimated time until your job begins
- Error details (if the submission failed)

To see what this would look like, review the code here.
You can access the WSDL for the Outbound Webservices here.

Collect Status Information

Now that you've sent a fax, we will look at collecting status information. Knowing the status of faxes is often considered as important to a customer's business processes as the fax delivery itself. As with sending faxes, collecting status information is a very simple process. It may be accomplished using either a "pull" process, whereby an application will poll Concord and download status as it is available, or a "push" process, whereby Concord will push the status to a client's endpoint when a job completes.

We begin with the "pull" process, listed under the Fax Web Services Methods on the Concord Developers portal. There are a few methods to choose from, depending on the information you are looking to collect.

Fax Webservices Status PULL Methods:

Method	Description
GetFaxStatus	Query the current 'general' status of 1 or more previously submitted fax jobs to find a "Success", "Pending", or "Failure" for each job.
GetRealTimeFaxStatus	Query a more detailed status of 1 or more previously submitted fax jobs. Example: In lieu of Pending would return "Dialing" or "Sending"
GetRealTimeFaxStatusEx	In addition to all functionality offered in GetRealTimeFaxStatus, includes: - Time of Delivery (or completion if error) - Duration
GetRealTimeFaxStatusEx2	In addition to all functionality offered in GetRealTimeFaxStatusEx, includes: - Remote Fax CSID
GetRealTimeFaxStatusEx3	In addition to all functionality offered in GetRealTimeFaxStatusEx2, includes: - Fax Submission Date/Time - Fax Delivery Start Date/Time - Number of Prior Delivery Attempts Made

As the below example illustrates, it is very easy to request status on a fax. To request status, you will need to include:

- Credentials for authentication
- FaxJobID(s)

C#

```
bool GetFaxStatus(
  string UserID,
  string strPIN,
  FaxJobID [] FaxJobIds,
  out FaxStatus [] FaxStatusList,
  out WSError WSError
)
```

To see an example of GetFaxStatus review the sample code here.

If your fax was not delivered, it is important for you to understand the reason it failed so that you may take the best course of action. A full list of status codes and descriptions are available on the developer portal here.

Optional: You can use the customer provided ReferenceId prefixed with 'JRI-' ('JRI-ReferenceId'), in lieu of the JobID (which is supported in the SendFaxEx method). If you choose this option, you must ensure the uniqueness of the ReferenceId while submitting the fax requests.

Follow the below best practices while requesting fax status using Fax Web services:

- **Limit the number of jobs per request:** Even though Concord web services impose no limits on the number of jobs per requests, it is advised that for optimal response time / performance, limit the number of jobs per requests to 100.
- **Response Timeout:** When requesting multiple job status per request, the time to process the request will increase. It is advised that you set the response timeout to 60-120 seconds or as required.
- **Status polling frequency:** On average, a single page may take between 40-60 seconds to transmit. Therefore, polling for status more frequently than the value mentioned above will result in gateway returning cached responses. It is advised that you should NOT poll for status with an interval less than 60 seconds and wait for 60 seconds before making the first status request.

- **Push Vs Pull:** Concord's web services provide efficient mechanisms for pushing status to the remote end on the completion of a fax. Status will be pushed to the remote end as soon as the fax is completed. Where possible it is advised to implement a push mechanism with failover to pull for efficient fax status processing. As an example, one may wait up to 5 minutes for the status to be pushed to remote end before starting to poll for status.

HTTPS Status Push Notifications Interface

Concord offers an option to have status pushed to a designated application endpoint via HTTPS. The format of the data is configurable, as is the template of included fax meta-data. To utilize this option, you will need to contact Concord Sales, Sales Engineering or Premium Support to configure the service on your Concord outbound account. Concord will set up a template for the data, based on your selected method and meta-data needs.

Available options for HTTPS Status Push:

Method	Description
HTTP Get	This notification type is very simple. All the tokens are encoded into the URL template, and the body template should be empty. The Http content type is also not relevant for this type of transaction.
HTTP Post Form Data	This notification type has two flavors. Application/x-www-form-urlencoded is the simplest form and is encoded similar to the part of the HTTP GET URL after the "?" mark. The code will automatically flip to the more complex multipart-form-data notification format, if an image is included in the notification.
Http Post application/ octet-stream	This notification type allows complete flexibility in what you want us to send you. As long as it is TEXT data and we can insert out tokens, the format is completely free form.
Http Post Xml	This transaction type would allow you to specify your own XML data, not following a SOAP convention, but instead a simpler protocol of your own choosing. We do not specify at all what may be contained in your XML but it can be anything from the specified token list.
Http Post Notify Listener Web Service	This SOAP service is defined/supported to allow notifications to get all the data/ status information that would normally be available for query from the system after the job completed. Instead, it is pushed to you as soon as the job is completed, without unnecessary polling of the system. The WSDL file to implement the listener service can be found here.

Further detail on methods and template examples may be found here.

All tokens that may be included in the meta-data associated with an outbound transmission may be found here.

Optional Status PUSH with PULL Backup

When choosing to receive final status notifications via PUSH technologies such as HTTP Post, HTTP Get or Web Services it is important to consider a backup strategy to PULL for final status. PUSH notifications can take up to several minutes after the fax has been delivered before they are PUSHED to your server. Also, if the server we push to becomes unavailable the notification will be delayed.

If your application depends on timely notifications, then implementing PULL is recommended over PUSH as it offers real-time status of the fax being sent. If you are using PUSH notifications, then it is recommended you implement a PULL in the event you have not received final status after the expected deliver date/time.

Receive a Fax

Inbound Web Services (PULL)

Concord offers a simple API that can be used to download inbound fax messages from the Concord platform. There are three steps to the process and methods can be found on the Developer Portal under Inbound Web Service Interface.

The following steps correspond to the methods described in the table below:

Step 1: Retrieve the list of received faxes (each fax will have an Item ID).
Step 2: Retrieve the items (faxes) per Item ID.
Step 3: Delete the faxes you have retrieved.

Method	Description
GetInboundList	Use this method to retrieve the list of received items (Item Identifiers). If desired, you can retrieve faxes based on a specific fax number, a date range, or a maximum number of faxes.
GetInboundByID	Use this method to retrieve items based on list of item IDs. You can use this method to retrieve multiple items. Best practice is to call this method once per message to avoid a bulk request that exceeds your system's response size threshold.
RemoveInboundByID	Use this method to remove a fax from the server based on a messageID.

To retrieve your fax or faxes, you will first need to request a list of items by providing your credentials for authentication and the number of items you wish to be returned in a **GetInboundList** request. The **GetInboundItemRequest** object allows you to narrow your request by fax number, specific date and time strings, and more.

Then, you may retrieve your fax(es) by making a call to **GetInboundByID** for each message returned in **InboundItemIds** from the previous method, along with your credentials.

It is important to note that your faxes will not be deleted from the server after they are retrieved.

To delete your faxes, you will need to call the **RemoveInboundByID** method and include the list of IDs that you wish to remove.

Sample code is provided for these methods:
GetInboundList
GetInboundByID
RemoveInboundByID

Inbound Fax HTTP Interface (PUSH)

Concord also offers several push methods to receive inbound fax documents and meta data. In this scenario, faxes are pushed to a customer HTTPS endpoint after they have been received and processed by Concord, using a predetermined template and method for the push. Method options are described below:

Name	Description
Http Post - Form Data	This notification will encode data as per the application / multipart / form-data setting.
Http Post - Application/ Octet-Stream	This notification type allows complete flexibility in the formatting of text data that Concord will send to you. As long as it is TEXT data and Concord can insert out tokens, the format is completely free form.
Http Post - Xml	This transaction type allows customers to specify their own XML data, not following a SOAP convention, but instead a simpler protocol of the customer's own choosing. Concord does not specify what may be contained in that XML file but allows anything from the specified token list.
Http Post - Fax Receive Notify	This SOAP service is defined / supported in order for the customer to implement their own web service for processing received faxes. The Concord Fax Network will notify the customer by making a web service call to the customer's end point.

Like the previously described HTTPS Push Notifications for outbound status, the Inbound Fax HTTP Interface requires that a template is configured for the account that is to receive messages and push data to a customer HTTPS endpoint. To utilize this option, you will need to contact Concord Sales, Sales Engineering or Premium Support to configure service on your Concord inbound account.

All available tokens that may be included in the meta-data associated with the inbound fax document may be found here.

Additional Services

We've covered push and pull APIs for both inbound and outbound faxing, but there are other options for sending and receiving as well as other APIs to support account management and account reporting. This overview will give you a sense of what additional options are available to you as a Concord customer. For further information, please see the Concord Developers Portal or contact Concord Sales, Sales Engineering or Premium Support for assistance.

Fax Assist

Fax Assist enables inbound fax routing directly to network folders and/or network printers within your environment. Many applications can also monitor folders for new documents and automatically ingest the inbound faxes as they are received and when integrating applications that utilize a file/folder drop, Fax Assist may represent the best path of integration. A single instance of Fax Assist may be used to manage multiple inbound fax lines, each with a specific configuration for the folder or printer to push to. When files are written, fax meta-data may be embedded in the filename or may be written to a meta-data file that can be used to ingest and index the fax document. For more information and access to the Fax Assist application and documentation, please visit Concord's downloads page.

Folder Fax

Folder Fax monitors specified network folders for new documents added to the folders by your applications and submits them to the Concord platform for outbound delivery. Fax routing information can be specified in the file name or through the inclusion of an accompanying control file. Fax Assist can be used to interpret and convert some existing file-drop processes to Concord oriented API calls. This means existing applications leveraging known formats can be integrated for outbound faxing with a minimum of development or process change. For more information and access to the Folder Fax application and documentation, please visit Concord’s downloads page.

Account Management APIs

Concord’s Account Management Automation API is a powerful inventory of API calls to support the automation of virtually any account provisioning, billing, or traffic reporting task that you could imagine. Using Account Management Automation to manage your own Concord account allows you to make changes in real time, and the information you receive in response to queries is the most recent information available. You have the ability to create or delete users, modify their permissions, manage your cover pages and administer your fax number inventory.

In addition, the Account Management Automation also provides three distinct levels of reporting:

Activity Reports

Activity Reports are used to provide faxing detail about inbound and outbound fax delivery events. They are designed to act as a primary activity log of sent and received faxes.

Detailed Reports

Detailed report APIs provide access to detailed data on inbound and outbound transmissions and provide a comprehensive log of activity for inbound and outbound transmissions.

Call Detail Records

The Call Detail Record (CDR) is a monthly report that provides details on all billable fax activity. The data is provided in CSV/XLS format which can be easily integrated into a workflow or billing system. It is the purpose of CDR to provide information about all fax delivery events that may have a billing impact.

NEXTSTEP Data Extraction and Classification

Concord also offers the ability to apply Optical Character Recognition and Artificial Intelligence technologies to documents to classify them and extract information from fax and other PNG, TIF, or PDF documents as they are processed on the platform. Capabilities include classifying documents based on a customer-prescribed classification model, extracting specific identifying information from unstructured documents, signature detection, barcode reading and conversion to searchable PDF. NEXTSTEP document processing allows customers to make the most of their fax documents and automate fax intake and indexing according to data contained within the documents themselves. NEXTSTEP classification and extracted data can be delivered along with standard fax data when implementing services. For more information on NEXTSTEP services, please refer to https://developer.concordfax.com/nextstep/ and contact Concord sales or support.

The Concord Team is here for you!

Now that you have begun to use the Concord Fax Web Services APIs, you see how easy it can be. Please take advantage of the Developer Portal, as it will certainly facilitate your development. And don't forget Concord is here to support you. If you have questions, please feel free to contact our team of experienced developers and architects.

As a reminder, the Concord developers Portal can be found here and features the following:

- **Free Registration**: There are no costs to join our developer program!
- **Free Support**: Our support team is there to ensure you have everything you need to get your application up and running.
- **Best Practice Guidance**: Experienced developers will join you on a call to provide guidance on best practices to address your integration needs.
- **Access to Sample Code**: Your choice of ASP, JSP, C/C++, Java, VB, .NET, C# and PHP.

For general information on Concord and Concord fax services, please see https://concord.net/.