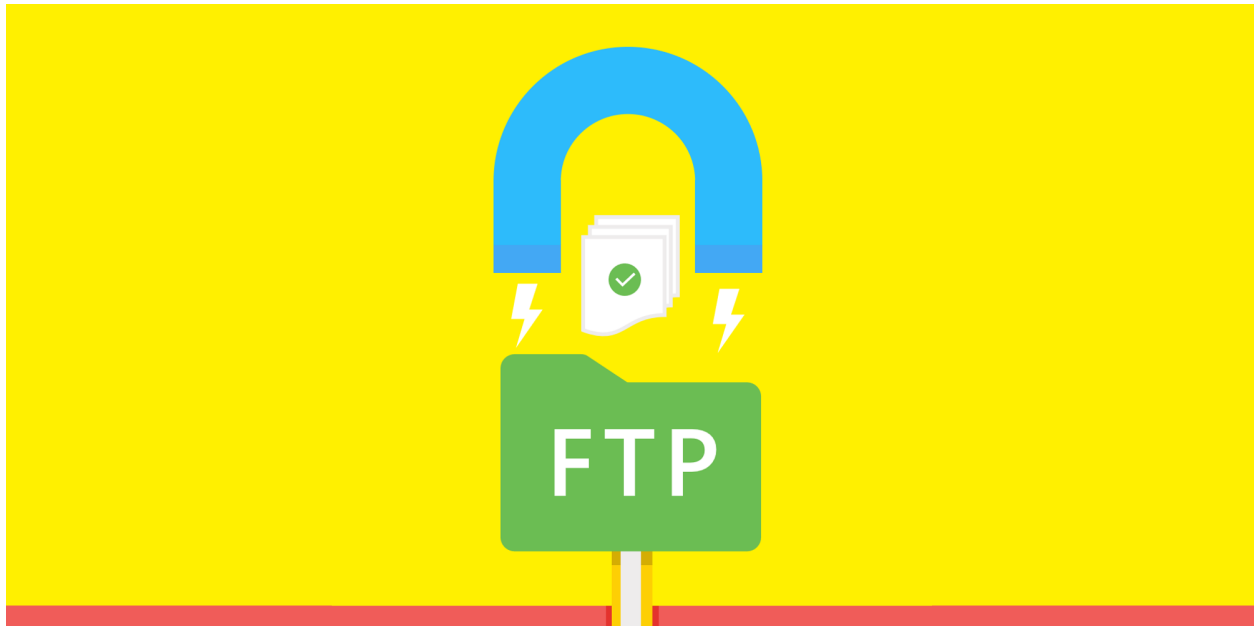


ClearTax E-Invoicing FTP Magnet

Specification Document and Typical Project Plan



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Version History

Version	Prepared by	Prepared on	Reviewed and approved by	Reviewed and approved on	Description
1.0	Shriram Bhat	16-03-2020	X	X	Initial draft
1.1	Shriram Bhat	01-09-2020	X	X	Add new features - Custom mapper, pan level, branch level, directory structure.
1.2	Shriram Bhat	30-11-2020	X	X	Add support for B2C QR code generation and IRN cancellation.

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1. Purpose

The purpose of this document is to provide technical specifications of the functionalities of ClearTax FTP Magnet for E-Invoicing.

2. Overview

2.1 Use cases

ClearTax E-Invoicing has state-of-the-art restful APIs that can be used to send data from ERP to ClearTax. You can consume these APIs and push data to ClearTax on a real-time or scheduled basis. In some cases, you may not be able to consume the APIs directly in the ERP for reasons like:

1. Unavailability of an in-house IT team to customize the ERP.
2. The high cost of development.
3. Longer project timeline.
4. Approval not received for direct API integration.

In that case, you may want to go for a simpler solution with FTP mode. As a business, you want to extract input data with sales documents from your ERP to FTP so that ClearTax can generate E-Invoice for those documents. Further, you also want to read output data received from ClearTax back from FTP so that you can save the IRN and QR Code back in your ERP.

2.2 FTP Magnet Solution

FTP Magnet is a middleware application between your FTP server and the ClearTax E-Invoicing application. You can export data from your ERP to your own FTP server. As a part of onboarding, ClearTax configures its FTP Magnet to connect to your FTP server. The FTP Magnet reads the input files from your FTP server and uploads them to the ClearTax E-Invoicing application. Once the uploaded files are processed, it writes the response back to your FTP server.

2.3 Key functionalities

Multi-GSTIN Multi-Branch - You can upload documents to multiple GSTINs and Branches in your user account with the same configuration using a defined directory structure and file naming conventions.

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Custom Template - The FTP Magnet is compatible with the ClearTax E-Invoicing template as well as custom templates that have been already mapped in your user account.

Failure Notification - In case of failure of upload of any file to ClearTax, you will receive a failure notification email in a defined mailbox.

3. Onboarding requirements

To use ClearTax FTP Magnet, we will require the following prerequisites.

3.1 ClearTax Account

Before you begin, you'll need a ClearTax Account to sign up for ClearTax FTP Magnet. If you don't have a ClearTax account, sign up with your email on the ClearTax portal. For more information, please contact your Account Manager.

3.2 FTP Server Configuration

The FTP Magnet is compatible with FTP, FTPS, and SFTP protocols. Using the FTP server configuration details, the FTP Magnet connects to the FTP server. You need to share the server host and protocol with ClearTax. In order to ensure that connections can be established at all times, it is recommended to keep the server live always and remove any restrictions on the number of connections from the same client if any.

3.3 FTP User Credentials

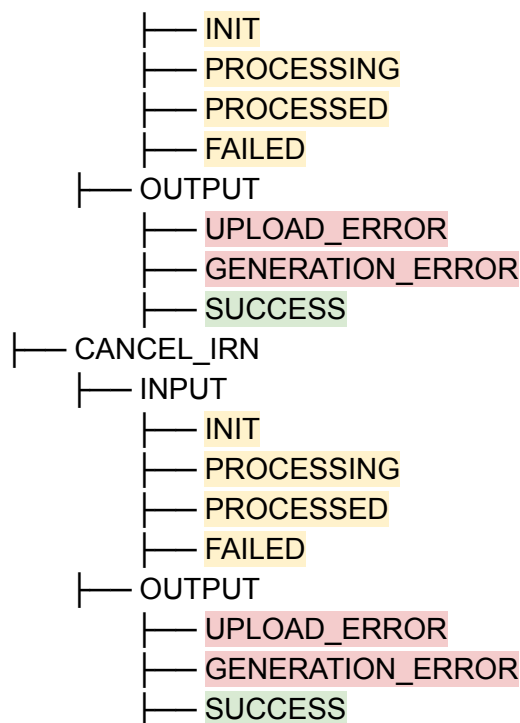
To access the files in the FTP server, ClearTax needs the FTP user credentials. For the purpose of this integration, you need to create a new user and share the username and password with ClearTax. This user must have permission to read and write on the designated directory and subdirectories recursively.

3.4 FTP Directory Structure

We will use the directories in the FTP server as a data source to the FTP Magnet as well as a way to maintain states of successful and unsuccessful uploads. Here's the required directory structure:

```
CLEARTAX/
├── GENERATE_IRN
│   ├── INPUT
│   │   ├── INIT
│   │   ├── PROCESSING
│   │   ├── PROCESSED
│   │   └── FAILED
│   └── OUTPUT
│       ├── UPLOAD_ERROR
│       ├── GENERATION_ERROR
│       └── SUCCESS
├── GENERATE_EWB_WITH_IRN
│   ├── INPUT
│   │   ├── INIT
│   │   ├── PROCESSING
│   │   ├── PROCESSED
│   │   └── FAILED
│   └── OUTPUT
│       ├── UPLOAD_ERROR
│       ├── GENERATION_ERROR
│       └── SUCCESS
├── GENERATE_EWB
│   ├── INPUT
│   │   ├── INIT
│   │   ├── PROCESSING
│   │   ├── PROCESSED
│   │   └── FAILED
│   └── OUTPUT
│       ├── UPLOAD_ERROR
│       ├── GENERATION_ERROR
│       └── SUCCESS
└── GENERATE_B2C_QR_CODE
    └── INPUT
```

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The directory “GENERATE_IRN” and the subdirectories within it will be used for generation of IRN.

The directory “GENERATE_EWB_WITH_IRN” and the subdirectories within it will be used for generation of E-Waybill with IRN.

The directory “GENERATE_EWB” and the subdirectories within it will be used for generation of E-Waybill for documents where IRN is not applicable.

The directory “GENERATE_B2C_QR_CODE” and the subdirectories within it will be used for generation of B2C QR Code.

The directory “CANCEL_IRN” and the subdirectories within it will be used for cancellation of IRN.

More information on these directories and how it will be used is available in the “Approach” section below.

Note - The directory names and structure are subject to change.

3.5 File Naming Convention

ClearTax allows a user to manage multiple PANs, GSTINs, and Branches in the same user account. At the time of uploading files to ClearTax, it is important to specify which PAN, GSTIN

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or Branch that particular document belongs to. For this purpose, ClearTax has defined a specific file naming convention.

ClearTax has different input templates for different document types. The template name helps us to identify the data type of the documents.

While exporting data from the ERP to the FTP server, you need to use the below file naming convention. This is very crucial as the identity of the GSTIN and Branch depends on the filename.

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PAN level file:

<PAN>_<TEMPLATE-NAME>_<FILENAME-WITH-DATE-TIMESTAMP>.<EXT>

Example:

AEKPV7203E_E-INVOICE Standard_EINV16052019015401.xlsx

GSTIN level file:

<GSTIN>_<TEMPLATE-NAME>_<FILENAME-WITH-DATE-TIMESTAMP>.<EXT>

Example:

29AEKPV7203E1Z9_E-INVOICE Standard_EINV16052019015401.xlsx

Branch level file:

<GSTIN>_<BRANCH>_<TEMPLATE-NAME>_<FILENAME-WITH-DATE-TIMESTAMP>.<EXT>

Example:

29AEKPV7203E1Z9_Mumbai_E-INVOICE Standard_EINV16052019015401.xlsx

Note:

1. ClearTax supports only XLSX, XLS and CSV formats for input.
2. In CSV, if a comma is used in data, use a delimiter other than a comma. Eg: Pipeline “|”
3. We recommend using underscore “_” as a separator in the file name. Please make sure not to use this character in the branch name or the template name.

Note - The file naming convention is subject to change.

3.6 Notification Email ID

While trying to upload a file to ClearTax, if the FTP Magnet runs into an error or exception, it will send out a failure notification to the email address provided. This can be helpful for you to check the file from the corresponding status directory and review the data in it and upload it again. You need to share the admin email address to receive such notifications.

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4. Approach

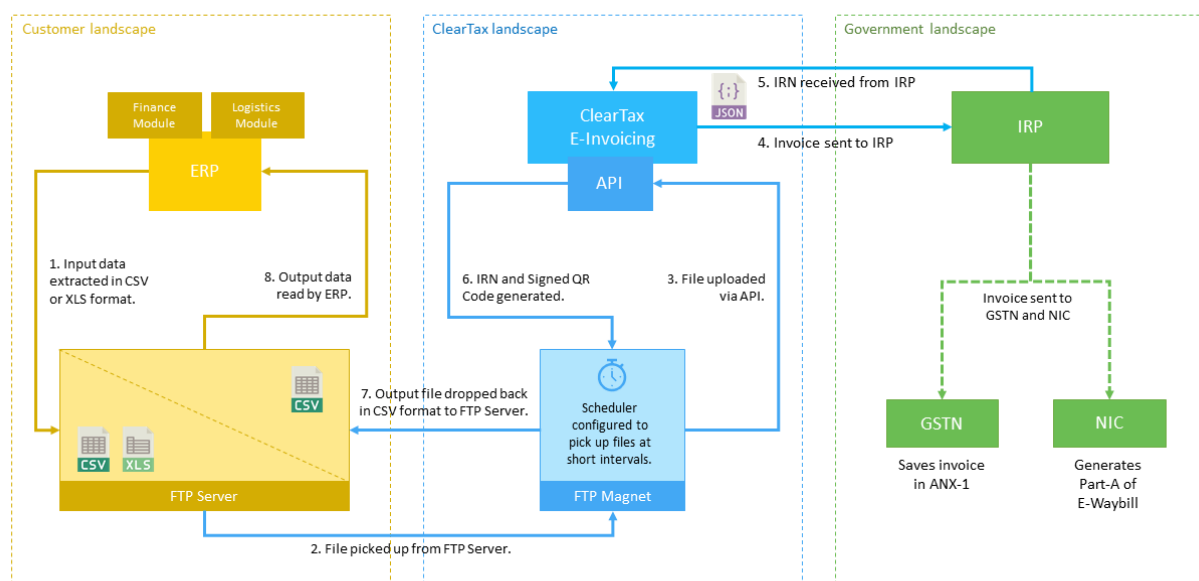


Figure 1. High-level architecture of FTP mode of integration.

4.1 Extraction of data from ERP

You will extract data from your ERP in the ClearTax template in CSV format and save it in the **"INPUT/INIT"** directory of your FTP server. This is the primary source of input data for ClearTax. To download a ClearTax template for reference, go to your ClearTax account and click on the "Import" tab or go to the [documentation page](#).

4.2 Uploading files to ClearTax

FTP Magnet is configured to keep looking for new files in the **"INPUT/INIT"** directory. Whenever a new file is found, it uploads the file to ClearTax with File Upload API. This is an asynchronous API and the final state of the upload will be available after polling status. So there can be some interim states until it reaches the final states (Success/Failure).

Once the file upload is initiated, the file will be moved from the **"INPUT/INIT"** directory to the interim directories within the **"INPUT/PROCESSING"** directory. The FTP Magnet will use these subdirectories to check the processing status. As a user, there is no need for you to take any action on the files in interim state directories.

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Exception Handling: If the file upload gets aborted, the FTP Magnet moves the input file to the “INPUT/FAILED” subdirectory. This file will be in the same name and extension as the input file.

4.3 Parsing uploaded files

Once the upload succeeds, the uploaded file will be parsed in ClearTax and converted into documents/invoices. The FTP Magnet moves the input file to the “INPUT/PROCESSED” subdirectory.

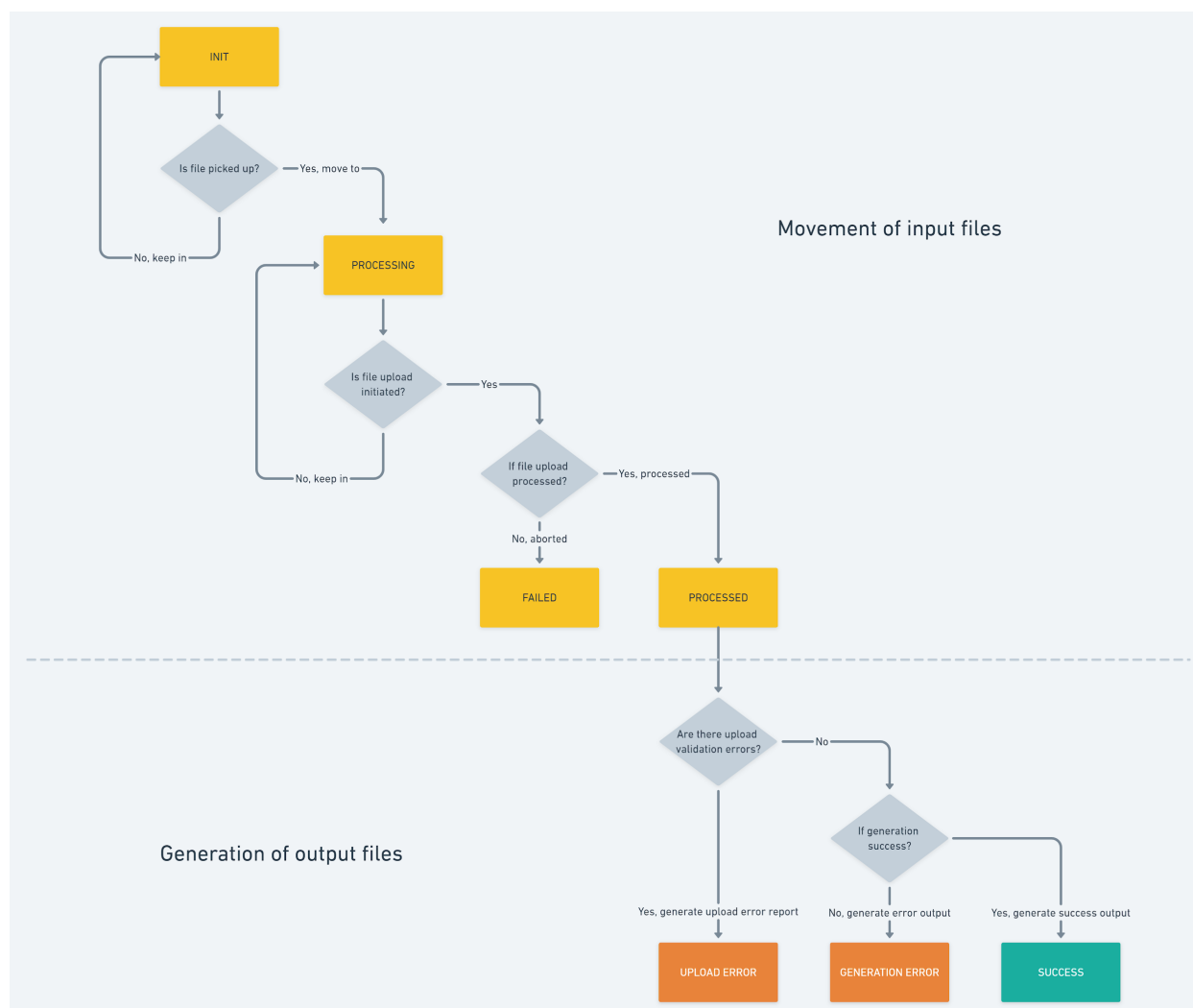
Exception Handling: If at the time of parsing, some validation error is caught, the FTP Magnet creates and saves an error file in the “OUTPUT/UPLOAD_ERROR” directory. This file will be in the ClearTax template in CSV format and will have an additional column in the end for “Errors”. You can read this file to correct the error and upload again. To download a sample upload failure error template, go to the [documentation page](#).

4.4 Processing parsed documents

Once parsing succeeds, the successfully parsed documents will be processed for IRN generation or cancellation. If the document processing succeeds, the FTP Magnet creates and saves an output file in the “OUTPUT/SUCCESS” subdirectory. This file will contain some basic fields in CSV format and will have additional columns for IRN and QR Code string received from the government.

Exception Handling: If the document processing fails, the FTP Magnet creates and saves an error file in the “OUTPUT/GENERATION_ERROR” subdirectory. This file will contain some basic fields in CSV format and will have an additional column in the end for “Errors”. You can read this file to correct the error and upload again. To download a sample processed failure error template, go to the [documentation page](#).

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4.5 Writing response back to ERP

You will read the file from the "OUTPUT" subdirectories and update the generated IRN, QR Code and other metadata back in your ERP. You can use this information to print it in your invoices as per your requirement.

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5. System Configuration

The FTP server will have to be hosted in your environment.

1. **Storage** - This depends on the number of files and the size of your input data extracted from ERP.
2. **Processing** - There is no requirement of processing capacity.

6. Activities and Timeline

SI	Particulars	Responsible	Efforts	Dependencies
1	Commissioning FTP Server with the defined directory structure and configuring the FTP user with required permissions.	Customer	2 days	NA
2	Extracting data from ERP to the FTP server in the ClearTax template and defined naming convention.	Customer	7 days	1
3	Sharing prerequisites with ClearTax: 1. ClearTax Account details. 2. FTP Server Configuration. 3. FTP User Credentials. 4. Notification Email ID.	Customer	1 day	1
4	Configuring FTP Magnet	ClearTax	1 day	3
5	UAT	Customer	3 days	4
6	Go-live	Customer	1 day	5

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7. RAID Log

7.1 Risks

1. No risks are known as of date.

7.2 Assumptions

1. The ClearTax account used for integration has an Account Admin role so that all APIs required for upload and generation are accessible.
2. The files in the "INPUT/INIT" directory are in the ClearTax template.
3. Every input file has a unique filename.
4. There are no duplicate PAN or GSTIN in the same user account. In case there are duplicates, then the files will be uploaded to one of the entities based on the response sequence of the Business API.

7.3 Issues

1. No issues are known as of date.

7.4 Dependencies

1. The integration can be started once the onboarding prerequisites mentioned in this document are provided to ClearTax.

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8. Phases

Particulars	Phase 1	Phase 2	Phase 3	Never
Actions supported				
Upload document to ClearTax	✓			
Generate E-Invoice	✓			
Cancel E-Invoice			✓	
Document types supported				
Invoices	✓			
Credit notes	✓			
Debit notes	✓			
Templates supported				
System template	✓			
Custom template		✓		
File and document ownership supported				
One file belongs to one GSTIN. In other words, All documents in a file belong to the same PAN and the same GSTIN. (Branch not specified).	✓			
One file belongs to multiple GSTINs but the same PAN. In other words, All documents in a file belong to the same PAN but different GSTINs.		✓		
One file belongs to multiple PANs. In other words, All documents in a file belong to the same Billing account but different PANs.				✓
One file belongs to one Branch. In other words, All documents in a file belong to the same PAN and GSTIN and Branch.		✓		
One file belongs to multiple Branches of the same GSTIN. In other words, All documents in a file belong to the same PAN and the same GSTIN but different Branches.			✓	
One file belongs to multiple Branches of different GSTINs but the same PAN.			✓	
One file belongs to multiple Branches of different GSTINs and different PANs.				✓

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