



Flat-File Integration vs. API for Accounts Payable

We've paired this article with a comprehensive guide to accounts payable. Get your copy of the Accounts Payable Survival Guide!

Get the FREE guide (<https://tipalti.com/ap-survival-guide/>)

As financial technology evolves, it drives the need for more data sharing across multiple verticals. Automated AP software (<https://tipalti.com/ap-automation/>) is often designed for seamless and flexible integration with your ERP (<https://tipalti.com/erp-integrations/>), through two types of integrations: flat-file and API.

Here, we explain the difference between flat-file and API data integration for accounts payable through the lens of use cases, examples, and general comparison.

Our analysis includes the strengths and weaknesses of each integration method, where the strongest applications lie, and how both can benefit your business best!

What is the Difference Between Flat-File Integration and API?

A flat-file architecture transfers sets of data (for a selected date range or number of records) via a CSV file or other flat-file format. Flat-file integration works well to transfer batch files for payment processing using SFTP (secure file transfer protocol).

API integration transmits data via an online API feed. An API connection shares information between two software systems in real-time, but it must be supported by all platforms in operation. In flat-file integrations, all that is required is the correct file format.

For many companies, flat-file and API integration are complementary solutions that are used in conjunction, depending on specific needs. When implemented correctly, both methods allow for a seamless data transfer to your ERP.

What is a Flat-File?

In order to understand how flat-file integration works, you should have general knowledge of a flat-file. A flat-file database stores data in a simple manner. Each line of the text file holds one record. Fields are separated by delimiters, like commas or tabs. Most database programs, like Microsoft Access and FileMaker Pro, can import flat-file databases and use them in a larger relational database.

File Transfer Protocol

This is the method for moving flat-file data from one location to another. Think of it as a tunnel where data can be transferred between two systems. FTP works by uploading a file onto a server, then later downloading it from the same server. You receive an email notification when the file is ready to download. FTP is quite convenient for processing multiple files quickly in one pass. It's also the go-to delivery option for offline data usage.

The FTP method is used to transfer different file types like:

- XML
- CSV
- Other flat-files

FTP alone is not highly secure, so companies will add an extra layer of encryption.

Secure File Transfer Protocol

This additional form of encryption is called secure file transfer protocol (SFTP). It facilitates data access and transfer across a secure shell data stream to ensure all financial documents are protected.

Flat-File Transfer

In a flat-file transfer, requested and specified data files are imported from accounting (or other) software program as a .CSV file. The tab-separated file is another type of flat-file that can be used. Other file formats include XML, JSON, and HTML.

You may need to convert some of these file formats to CSV with a complex file reader. The brand (with which developers are integrating) decides which file formats to accept for their software system.

CSV Files

CSV (comma-separated values) files are text-based data files where a comma separates data from each field. You can choose to save them as Microsoft Excel spreadsheets or Google Sheets. NetSuite is one program that allows users to make flat-file .CSV transfers using either SFTP (secure file transfer protocol) or FTP (file transfer protocol). Software developers integrating their products through flat-file integration can also use these methods.

GET THE AP SURVIVAL GUIDE EBOOK ([HTTPS://TIPALTI.COM/AP-SURVIVAL-GUIDE/](https://tipalti.com/ap-survival-guide/))

What is Flat File Integration?

Flat-file integration works exceptionally well for bulk data transfers and is typically the only method available for older accounting systems. Flat-file transfers require verification to ensure the data transfer worked properly, the data is complete, and

the information is accurate.

Data files transferred using flat-file integration are only problematic if errors occur during data transmission. Therefore, you need to be sure there is a validation process for the data received or transferred via flat-file integration. Are the records transferred accurately and completely using the file system? Flat-file integration works well for customization and meeting specific data needs.

What is API Integration?

An API (application programming interface) provides a real-time and secure data connection from one Internet-based software system to another using cloud applications. Different systems, including accounting programs like web-based NetSuite and Salesforce, offer an API integration with add-in apps.

These companies provide app developers instructions for connecting through an API to their specific software product using code. Some companies, like Salesforce, limit the number of daily API calls per user per day and on a maximum basis for different plans.

Modern APIs use REST (representational state transfer) API rules. REST API provides communications between Internet-based cloud software and a cloud (Internet-based) app or software program. REST APIs reside on the server and talk to the client.

An API is a type of web service. When it uses REST API software architecture, the web service is called a RESTful web service (<https://docs.oracle.com/javaee/6/tutorial/doc/gijgy.html>). Google Cloud APIs

(<https://cloud.google.com/apis/docs/overview>), in the Google Cloud Platform, use a JSON REST API interface or a gRPC interface to make API calls. You can also use HTML commands in a REST API.

API integration is a good substitute for EDI (<https://tipalti.com/what-is-edi/>), which is an old standard that works with specific parties established through agreements. While legacy systems may continue to use EDI, newer companies will benefit from lower-cost API that allows them to share data in real-time.

How Does Accounts Payable Automation Software use API or Flat-file Integration?

Accounts payable automation software includes digital documents, including purchase orders and vendor invoices, to automate the financial process. AP automation software is designed for large batch payments to vendors and individual “bill pay” to suppliers when needed.

With an API connection, users log in to their accounting software system to get the expanded features of AP automation. The user interface looks like your regular accounting software or ERP (enterprise resource planning) system.

They can also log into their AP system and perform the necessary tasks, or from outside such as approving an invoice via email and upon completion of payments in their AP system, the data automatically syncs with their ERP or Accounting systems. Tipalti NetSuite API integration is one such example (<https://tipalti.com/product/integrations/netsuite/>).

Brands that also offer flat-file integration work well for mass batch processing of payments (using bulk data transfers). The software developer can map the required fields. The user then selects the payment date.

With accounts payable processing, there are configurable workflows. Flat-file integration automates these selections to the extent possible for future payment processing.

One difference between flat-file and API systems is the use of real-time records. This may or may not be beneficial depending on the accounting task you are trying to achieve. API syncs the latest records in real-time.

In use cases like batch processing, flat-file integration works better. That's because you'll have a more positive cash flow balance if you don't pay your vendors on the exact day an invoice is received. An AP department typically has a turnaround time and a remittance window. They don't need to access the latest AP invoices in real-time because they're processing payments in batches.

When to Integrate via API & When to Use Flat-File

Even though API is touted as the modern way there are instances in which it functions less effectively than flat-file integration. Here are a few considerations to keep in mind when choosing what type of integration works best:

Usage of Data

Are you using the data to build a product feature or power a platform? This speaks to the flexibility customers will need. For example, questions like "How does this scan invoices?" lends itself nicely to an API endpoint. This is considered a product feature because it solves a very specific user need.

In contrast, if a customer wants to review the past 6 months of vendor payments, this request lends itself well to a bulk data transfer process. In this case, flat-file steals the show.

Volume and Frequency of Updates

How often do you need your AP data updated? The cost of pulling large datasets into a database can be considerable if updates are frequent. In this case, an API solution would suit a business better. However, if you have smaller datasets with less frequent updates, flat files work best.

Relationship Between Entities in Data

A key design principle of a REST API is that it is entity-based. While this makes it easy to predict the location of each entity, it makes it harder to string together related entities. In this case, the customer would need to make additional API requests to gather all the information needed.

When the object graph is rather large, and the user needs to access it all at once, flat-files tend to be an easier choice.

File Format Requirements

When customers have vastly different schemata, it's often wise to customize formats to reduce friction and increase adoption of the data platform. Maintaining multiple formats in a single API is complex. It often accrues technical debt in a codebase.

A hybrid system, in this case, will use the API to generate a standard set of flat-files that can be customized post-process. This enables a business to build out features in the core API while still meeting the needs of customers with specific format requirements.

In Closing

So, which system works best for your accounts payable automation software? There is no one-size-fits-all solution. Although APIs are a great solution for many AP tasks, they are not the only solution. Flat-files enable a higher level of customization that allows brands to meet very specific client needs and provide substantial data flexibility.

It's important to take a look at your top three-five goals for the AP department (<https://tipalti.com/structuring-your-accounts-payable-department/>) and align them with current data needs. Asking the important questions regarding data style, volume, format, and usage can help you make more informed decisions on future distribution.

WHY TIPALTI

Overview (<https://tipalti.com/product/benefits/>)

Benefits by Role (<https://tipalti.com/product/benefits-by-role/>)

AP Automation (</ap-automation/>)

Mass Payment (</mass-payments/>)

Bill.com Alternative (</bill-com-alternative/>)

COMPANY

About Us (</about/>)

Careers (</careers/>)

Partnerships (</partners/>)

Support (</tipalti-support/>)

Events (</event-hub/>)

Press (</press/>)

In The News (</in-the-news/>)

Contact Us (</contact-us/>)

CUSTOMERS

[Overview \(/customers/\)](#)

[Business Services \(/customers/services-industry-solutions/\)](#)

[Software and Technology \(/customers/tech-industry-solutions/\)](#)

[Ecommerce and Retail \(/customers/ecommerce-and-retail-solutions/\)](#)

[Marketplaces and Gig Economy \(/gig-economy-freelancer-payments/\)](#)

[Video and Digital Media \(/customers/video-media-industry-solutions/\)](#)

[Video Gaming \(/customers/gaming-industry-solutions/\)](#)

[Financial Services \(https://tipalti.com/customers/financial-industry-solutions/\)](https://tipalti.com/customers/financial-industry-solutions/)

[Online Services \(https://tipalti.com/customers/online-industry-solutions/\)](https://tipalti.com/customers/online-industry-solutions/)

[Education \(https://tipalti.com/customers/education-industry-solutions/\)](https://tipalti.com/customers/education-industry-solutions/)

[Healthcare \(https://tipalti.com/customers/healthcare-industry-solutions/\)](https://tipalti.com/customers/healthcare-industry-solutions/)

[Advertising Technology \(/customers/adtech-industry-solutions/\)](#)

[Affiliate and Influencer Networks \(/customers/affiliates-and-influencers-solutions/\)](#)

[Manufacturing and Wholesale \(https://tipalti.com/customers/manufacturing-and-wholesale-solutions/\)](https://tipalti.com/customers/manufacturing-and-wholesale-solutions/)

PRODUCT

[Overview \(/product/\)](#)

[Supplier Management \(/product/supplier-management/\)](#)

[Procurement Management \(/procurement-management/\)](#)

[Invoice Management \(/product/invoice-management/\)](#)

[PO Matching \(/product/po-matching/\)](#)

[Tax and VAT Compliance \(/product/tax-regulatory-compliance/\)](#)

[Global Payments \(/product/global-payments/\)](#)

[Self-Billing Module \(/product/self-billing-invoice/\)](#)

[Payment Reconciliation \(/product/payment-reconciliation-reporting/\)](#)

[Tipalti Detect \(/product/detect-risk-module/\)](#)

[Invoice-Based \(/product/invoice-flow/\)](#)

[Performance-Based \(/product/performance-flow/\)](#)

PLATFORM

[Overview \(/product/platform/\)](#)

[Multi-Entity Architecture \(/product/platform/multi-entity/\)](#)

[Financial Controls \(/product/platform/financial-controls/\)](#)

[Payment API \(/product/platform/api/\)](#)

[Secure Cloud \(/product/platform/cloud/\)](#)

[Money Services Business \(/product/platform/money-services-business-msb/\)](#)

[Integrations \(/product/integrations/\)](#)

[Pi Payables Intelligence \(/product/pi-payables-intelligence/\)](#)

ADDITIONAL SERVICES

[Tipalti Multi-FX Currency Management \(/product/multi-fx/\)](#)

[NetNow Accelerated Payments \(/product/netnow/\)](#)

[FX Hedging \(https://tipalti.com/product/fx-hedging/\)](https://tipalti.com/product/fx-hedging/)

[Implementation Services \(/product/implementation/\)](#)

[Supplier Enablement Program \(/product/supplier-enablement-program/\)](#)

REGION

North America ▼

CONTACT US (/CONTACT-US/)

- [.https://www.linkedin.com/company/tipalti/](https://www.linkedin.com/company/tipalti/)[.https://www.instagram.com/tipalti/](https://www.instagram.com/tipalti/)
- [.https://www.facebook.com/Tipalti/](https://www.facebook.com/Tipalti/)[.https://twitter.com/tipalti/](https://twitter.com/tipalti/)
- [.https://www.youtube.com/c/TipaltiVideos/videos](https://www.youtube.com/c/TipaltiVideos/videos)

We Handled It. SM