WHAT ARE APIs AND API INTEGRATIONS?

(for Non-Technical People)

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What is an API integration?

As someone who works in revenue, marketing, or operations, you may have been hearing an awful lot about API integrations lately, and how they're becoming more important to what you do.

So, what does "API integration" mean? Let's start from the top with the more obvious question:

What is an API?

An API, or "application programming interface," is, according to Wikipedia:

> "
>
> ...A set of subroutine definitions, protocols, and tools for building application software. In general terms, it is a set of clearly defined methods of communication between various software components."

...But what does this really mean?

APIs: Shipping for software

Perhaps the easiest analogy to explain the API is, of all things, the way international shipping has changed over time.

Prior to World War II, products were generally shipped as *"break bulk"* - loaded individually onto freight ships by squads of longshoremen.

However, after World War II, the way freight was shipped changed permanently once *intermodal freight transport* gave rise to standardized shipping practices.

By specifying a standard size and spec for freight containers, businesses were able to massively expedite the shipping process.

So long as a company's wares fit inside, and came in at an agreed-upon maximum weight, and could be properly sealed and loaded onto a freight ship, those wares could be shipped anywhere in the world.

In the same way, APIs act as shipping vessels for software. APIs enable one application to interact with another in a manner that is, like with standardized shipping, uniform and produces repeatable results.

While freight is shipped in vessels made of reusable steel, APIs for web services consist of all the interactions, or ***messages***, passed to (requests) and from (responses) an application. APIs have grown massively in popularity - more than *16,000 are in use in the wild* [1], with some estimates going as *high as 50,000* [2].

API vs. UI - Note: An API is not to be confused with a user interface, or UI, which is the front-end interface layered on top of software that lets you give your application various commands to get it to do what you want. In other words, UIs are what humans use to interact with software; APIs are what machines use.

The most commonly-used API for web services: REST

For web-based services (that business users use for CRM, marketing platforms, and the like), the most popular and prevalent is the **REST** API (pronounced “rest ay-pee-eye”), essentially the spiritual successor to **SOAP**. (SOAP is a mature API developed in the 1990s that uses XML for message formats, and may require an extensive **XML** framework to work with.)

70% of public APIs are REST APIs [3]. REST APIs offer more flexibility, a gentler learning curve, and work directly from an HTTP URL rather than relying on XML. REST typically performs five types of tasks:

- **DELETE -** Remove a specific resource identified by a URL.
- **GET -** Read/retrieve a copy of a specific resource.
- **PATCH -** Modify a specific resource.
- **POST -** Create a new resource.
- **PUT -** Update an existing resource

REST APIs can also output data in a variety of formats including XML as well as HTML, JSON, and even CSV files.

How do REST APIs work?

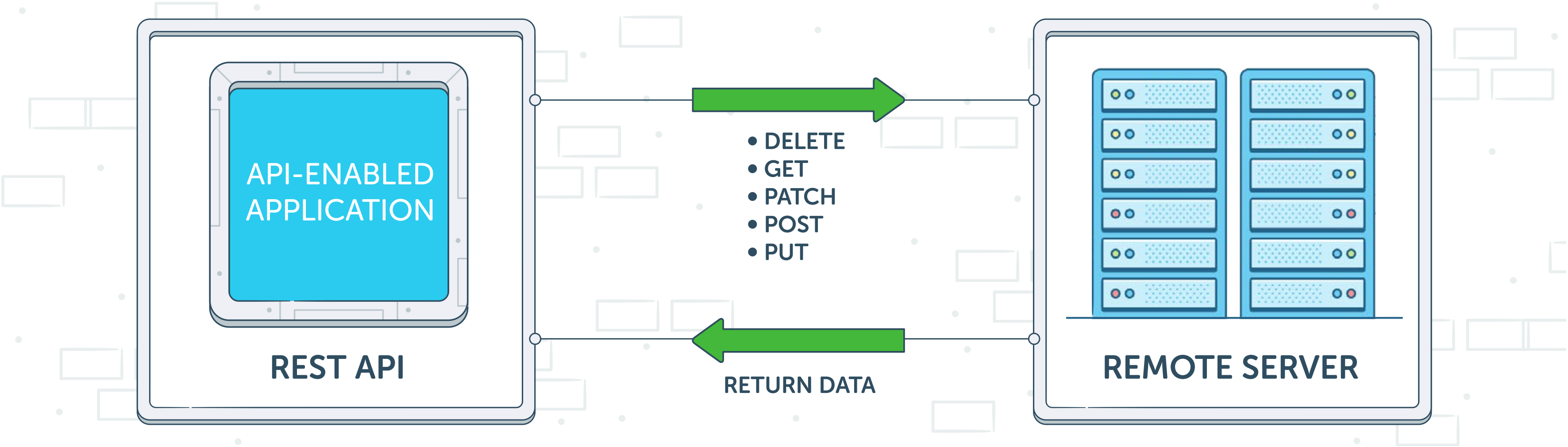
At their simplest form, REST APIs for web services usually involve the following parties:

- **Your web-based, API-enabled application**
- **Remote server**
- **Specific data request**
- **Returned data/function**

While there are many different flavors of software and many different flavors of server, REST APIs act as a standardized wrapper to help your API-enabled applications successfully communicate with online servers to make information requests.

REST API-enabled applications:

1. Use the API as a standardized wrapper to communicate with online servers
2. Send a specific data request (DELETE / GET / PATCH / POST / PUT) to a server
3. Receive data in response



REST API ensures that the format of all messages is standardized, so that everything talks to everything else properly.

API REVIEW - APIs are the software layer that enables applications to interact with each other. Like shipping containers, they ensure that any information contained within them can be properly transferred from Point A to Point B (and back) in a uniform and standardized manner.

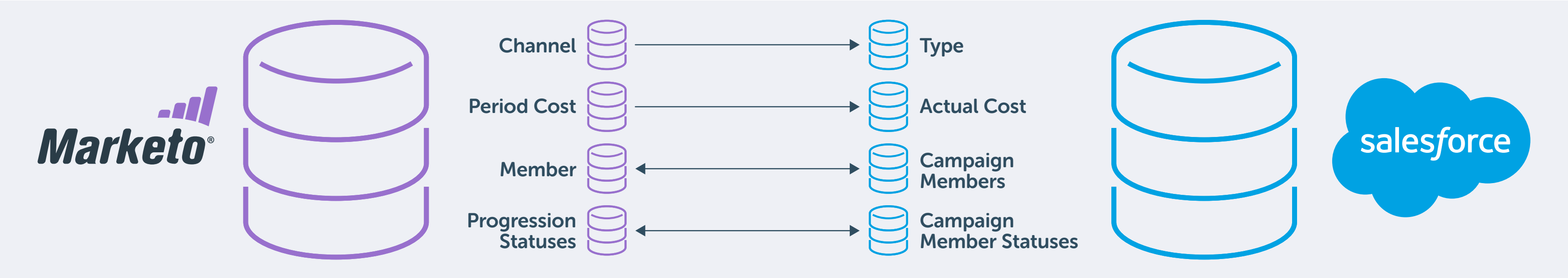
The most common API for web-based services is REST. While SOAP has been around longer, REST is more lightweight and has become significantly more popular.

What are API integrations? The anatomy of an API integration

The term API integration refers to how two or more applications, which each have APIs of their own, can be connected to each other (via their APIs) to perform some joint function. Basically, “API integration” means using the API layer of two or more applications to make them talk to each other.

One of the most well-known API integration examples for marketing and revenue professionals is the *Marketo -> Salesforce sync*, which:

- Joins the two tools via API
- Adds an automation layer
- Get the integrated apps to perform their tasks in response to a trigger



As Marketo itself explains, “The sync between Salesforce and Marketo is bidirectional only for leads, contacts, and Salesforce campaigns. In these cases, whenever you make changes in either Salesforce or Marketo, your updates will be reflected in both systems.”[4]

In this case, the marketing platform is connected to the CRM so they can share data, and an additional automation layer sets each one to talk to the other to sync up lead, contact, and campaign info. As a result, anytime you update lead, contact, or campaign statuses in one application, the automation layer ensures that new data flows to the other application.

Why API integrations are important: APIs & Integrations for Business Applications

For the Marketo -> Salesforce sync, the value should be obvious. Having each application properly connected so you can push any updated data from one to the other is obviously helpful. (After all, it beats having to manually enter the same data twice into two different applications.)

Better still, having an automation layer that automatically updates the other's data when something changes is definitely an important time-saver, too. But it's more than that.

In this case, API integration + automation also ensures data integrity across your stack without having to worry about versioning issues as account data gets updated in one place, but not in another.

(And ideally, it does this without you having to having to go back and double-check everything manually.) This means both time savings and taking ownership of your business data.

In theory, the out-of-the-box API integrations that come with your different software applications solve all your problems as you continue to use these various apps for marketing, sales, and revenue projects.

In the real world, you know that one-size-fits-all solutions rarely cover everything. You and your team have challenges and use cases that are unique to you.

What does this mean in practice? Your company probably uses apps like Salesforce, and certain fields in Salesforce, differently than other companies do.

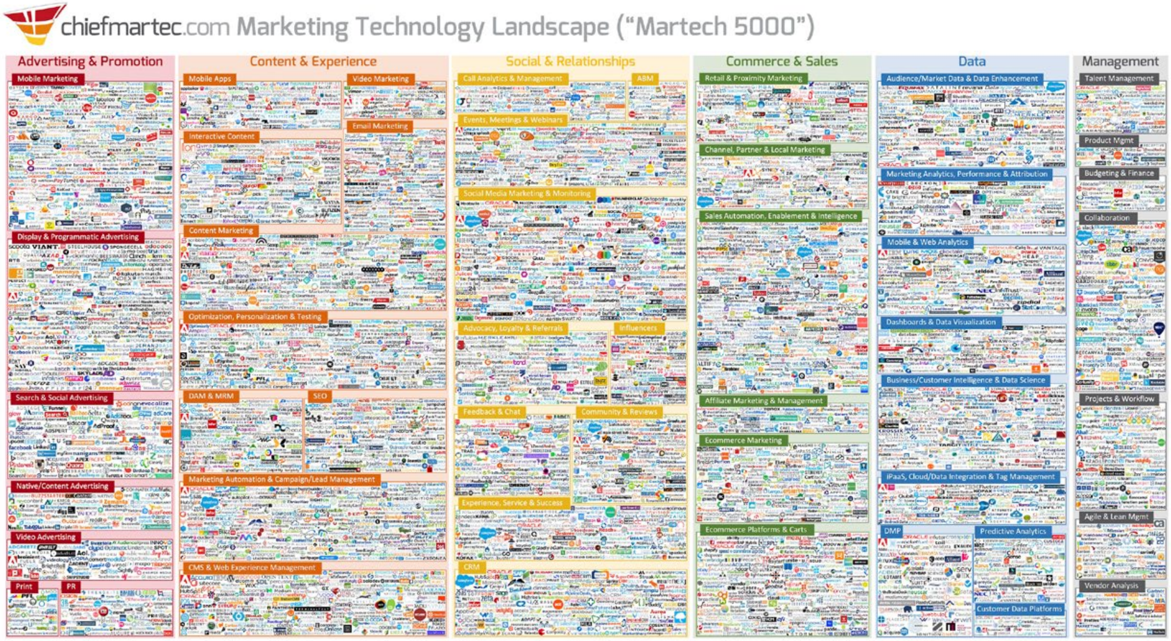
For example, Software-as-a-Service (SaaS) companies may primarily use Salesforce objects to represent accounts or opportunities, while real estate firms may primarily use Salesforce objects to represent individual properties for sale or rent. (So, you can see why a blanket "sync for all objects" won't necessarily solve all your problems.)

What about the rest of your stack?

There’s also another challenge here: Your tech stack probably isn’t just Salesforce and Marketo. For instance, if you work in marketing, your tech stack may include any of 5,000+ applications for marketing automation, CRM, email service providers, customer surveys, webinar broadcasts, content management systems, and many more.

And while the vast majority of modern business applications do have APIs so business users can use them, sadly, very few of them offer customizable, native integrations to the other 4,999 tools you might need to do your job every day. This means that getting all your applications to talk to each other the way you need them to, and seamlessly send lead/account data to each other, isn’t really something that happens automatically.

Realistically, you’ll be looking at stoppages as apps de-sync, lead data gets lost or duplicated, and you experience all those other issues you’ve come to expect. Trying to get your data to sync up usually requires error-prone manual work, jury-rigged workarounds, or filing a ticket for IT support.



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Advertising & Promotion
Mobile Marketing
Display & Programmatic Advertising
Search & Social Advertising
Native/Content Advertising
Video Advertising
Print
PR
Content & Experience
Mobile Apps
Video Marketing
Email Marketing
Interactive Content
Content Marketing
Optimization, Personalization & Testing
DAM & MRM
SEO
Marketing Automation & Campaign/Lead Management
CMS & Web Experience Management
Social & Relationships
Call Analytics & Management
ABM
Events, Meetings & Webinars
Social Media Marketing & Monitoring
Advocacy, Loyalty & Referrals
Influencers
Feedback & Chat
Community & Reviews
Experience, Service & Success
CRM
Commerce & Sales
Retail & Proximity Marketing
Channel, Partner & Local Marketing
Sales Automation, Enablement & Intelligence
Affiliate Marketing & Management
Ecommerce Marketing
Ecommerce Platforms & Carts
Data
Audience/Market Data & Data Enhancement
Marketing Analytics, Performance & Attribution
Mobile & Web Analytics
Dashboards & Data Visualization
Business/Customer Intelligence & Data Science
iPaaS, Cloud/Data Integration & Tag Management
DMP
Predictive Analytics
Customer Data Platforms
Management
Talent Management
Product Mgmt
Budgeting & Finance
Collaboration
Projects & Workflow
Agile & Lean Mgmt
Vendor Analysis

Sources: CabinetM, Capterra, G2 Crowd, Google, LUMA Partners, Siftery, TrustRadius — see http://chiefmartec.com/2017/05/marketing-technology-landscape-supergraphic-2017/ for details.

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How to do an API integration: Is middleware the answer to your problems?

Thankfully, there's an alternative. A la carte API integrations are generally the domain of middleware integration tools that were built to tie together different software applications. These run the gamut from simple, point-to-point ***connectors*** (the features that literally connect one software application to another) for small businesses all the way to behemoth enterprise software suites.

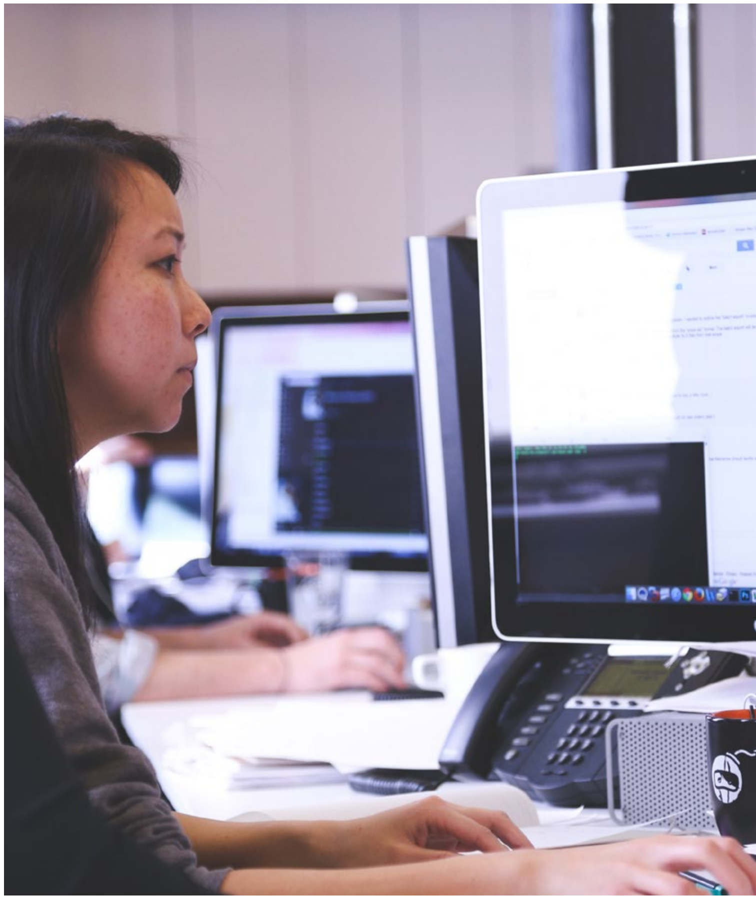
You'll typically find two classes of middleware integration tools on the market:

- **Lightweight SMB:** These tools offer the upside of having a graphical user interface that can be manipulated by non-technical people. These tools often map extremely well to the needs of small and mid-sized business. Unfortunately, they can't always support businesses that need deeper, more-complex integrations to perform sophisticated tasks that go beyond simple point solutions.

- Heavy-duty enterprise: These tools tend to offer a deeper suite of functionality, but have complicated front-ends, which frequently require coding. It's extremely common for enterprises that use such tools to have teams of engineers to decipher and interact with applications like these. Unfortunately, such products aren't necessarily a good fit for everyone, especially revenue professionals who need to be nimble enough to adapt to changing market conditions (and can't necessarily wait around for IT tickets to make adjustments).

Regardless of your company's size, you can benefit from API integrations that tie together your tech stack. Like the Marketo-Salesforce integration, you can:

- Plug up sales funnel leaks: Integrate marketing platform with outbound email platform, rapidly responding to leads, automatically instead of going cold
- Onboard new customers quickly: Integrate CRM with helpdesk to share all context from the sales cycle with support teams to rapidly onboard new customers
- Speed up processes across many functions: With API integrations, you can save time and share valuable data for many different situations.



API integrations: Additional points to consider

There are additional points to consider if you decide to pursue a middleware integration tool:

- **Alerting -** Will the solution you're looking into properly provide alerts for important events, such as data or runtime errors? Or will it simply grind to a halt with no warning, leaving you to find out, too late, that your important processes never went through?
- **Pricing -** Along these lines, will the solution you're looking into price integration services in a way that will enable you to scale? Unfortunately, several early middleware tools still use outdated pricing models that charge additional fees per user or per individual connector.

  The former is a nuisance that can be skirted with shared user login applications, but the latter is a genuine roadblock to testing and optimization. A tool that gives you full access to every connector for any support app enables you to test different apps to see how their API integrations can work for you. An archaic pricing model that charges by connector locks you out of being able to test integrations for the additional app you needed by charging you additional fees that may be out of your budget.
- **Data scalability -** Will the solution you're investigating properly scale with your task-related needs? In order to help you accomplish your most important work today as well as tomorrow, you need a solution that is capable of manage variable quantities of data as you scale your processes to flow more data between your various stack applications.
- **Connector scalability -** In addition to supporting native integrations, does the solution you're investigating have the ability to responsively add support for new connectors or enhance existing connectors? Again, not all API integrations are one-size-fits-all, and out-of-the-box functionality may not fit your exact use case. Does your solution have the ability to quickly adapt to what you need?

***WARNING* -** In your travels, as you research API integration alternatives, you'll often find middleware tools display a dazzling array of what appear to be native integrations for any number of software apps that may or may not be in your stack.

However, be advised that it's unfortunately common to see middleware tools struggle to adapt quickly to add new connectors or to enhance existing integrations with new functionality. If the tool you're researching doesn't address your exact use case and doesn't have a proven history of creating native integrations very quickly, it might not do so for a while!

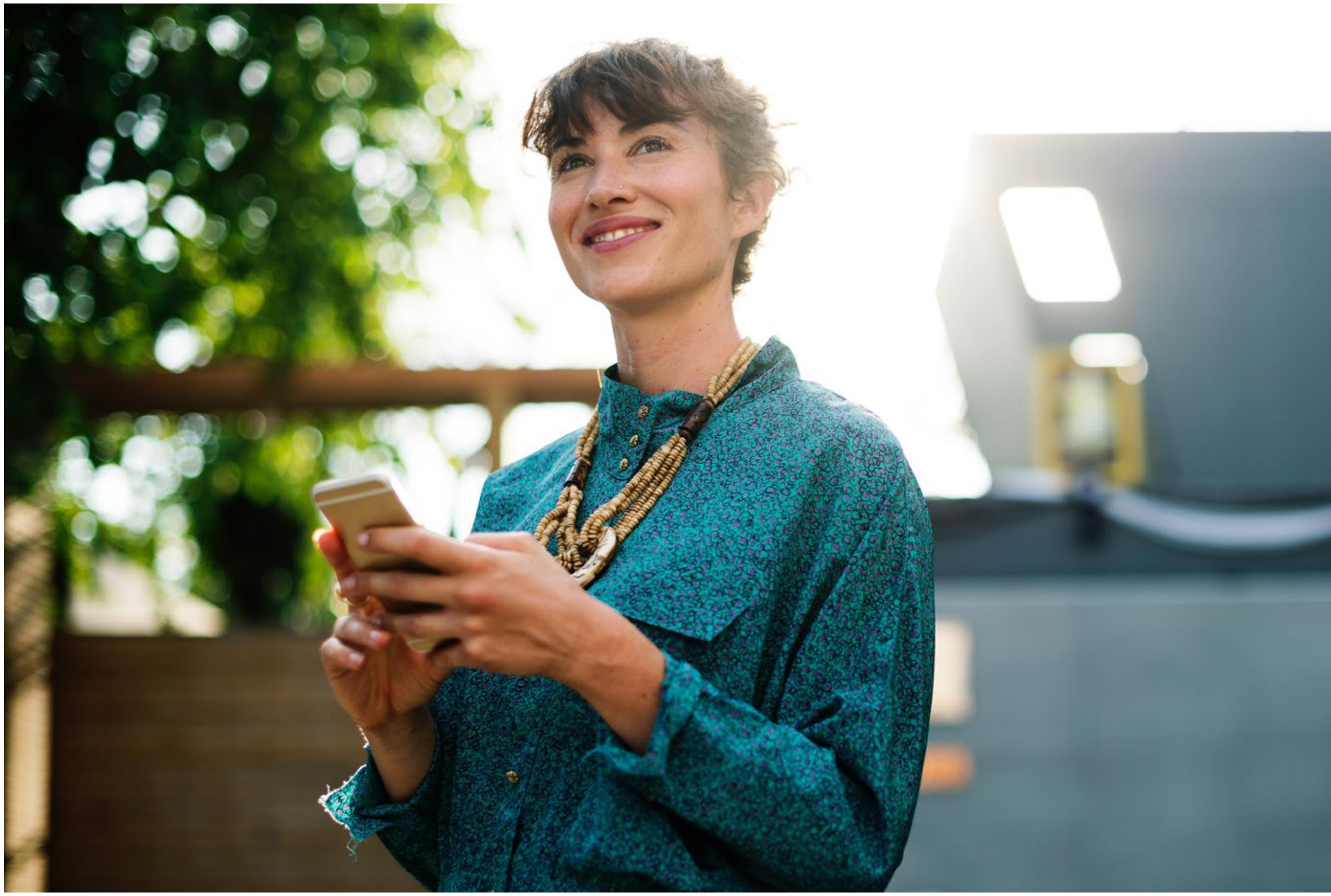
A better way to integrate your stack: General Automation Platforms

Fortunately, there's an even better alternative to the limitations of conventional middleware to perform API integrations that are seamless and customized to your specific needs: a General Automation Platform (GAP).

A GAP handles all your API integration needs across your stack by creating ***workflows*** (connected lists of tasks across your stack that a GAP fully automates) that are flexible enough to perform any business task you need, and are accessible enough to let you build out workflows with no coding or IT resources required.

A GAP has the following capabilities:

- **Full API integration:** Tying together multiple cloud-based services, including CRM, marketing automation, email automation, databases, and task management, for a variety of use cases across an organization, including, but not limited to, marketing, sales, customer success, operations, finance, and legal.



- **Rapid connector updates:** A GAP is also adaptable enough to spin up new point-to-point connectors as needed, as well as to regularly enhance its existing pool of connectors to better fit your changing needs.
- **Full automation with powerful branching & conditional logic:** Automate processes using multiple cloud services, such as having marketing automation automatically update lead status in CRM, or having changes in opportunity status automatically assign follow-up tasks in your task management solution.

Best-in-class GAPs integrate and automate at scale, and can connect just about any cloud-based service into complex, multi-step workflows with conditional logic that does everything you need, no matter how big your business needs get.

- **Ease of use:** A user-friendly interface that lets business users - not just engineers - directly integrate tech stack components to build automated workflows. The best GAPs have simple, drag-and-drop interfaces that you can build yourself in just minutes, rather than waiting days or weeks for IT to get to your support ticket in the queue.
- **Scalability:** GAPs can scale with your data usage and needs. Because GAPs are highly accessible and let business users build their own automated workflows, GAP users tend to grow their usage over time as they create more API integrations across more and more segments of their tech stack. As they do, it's natural for them to run more processes and flow more data through them.

GAPs are also priced to enable users to scale by not limiting access to individual connectors or individual users. Rather, GAPs offer team functionality that enables groups of business users to collaborate and innovate on new workflow ideas with all connectors available to users by default.

- **Alerting & analytics:** A GAP is equipped with full alerting and analytics capabilities to help users quickly diagnose any workflow issues and monitor data usage.

Takeaways

API integrations connect the different components of your tech stack to make them talk to each other and pass data seamlessly.

They're also important because building automated workflows of different applications that have been integrated via API can get rid of time-consuming manual labor.

They can also seamlessly transfer data that might otherwise require manual input and incur versioning issues, and enable you to do more of the important work you need to, faster and more efficiently.

When looking for a solution to help you build API integrations, be sure to find one that fits your company size and business model, can rapidly adapt to your changing needs, and offers the flexibility, power, and ease-of-use your team requires.

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