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What is enterprise integration?

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What is application integration?

Application integration is the process of connecting disparate software applications so they can communicate and work together seamlessly.

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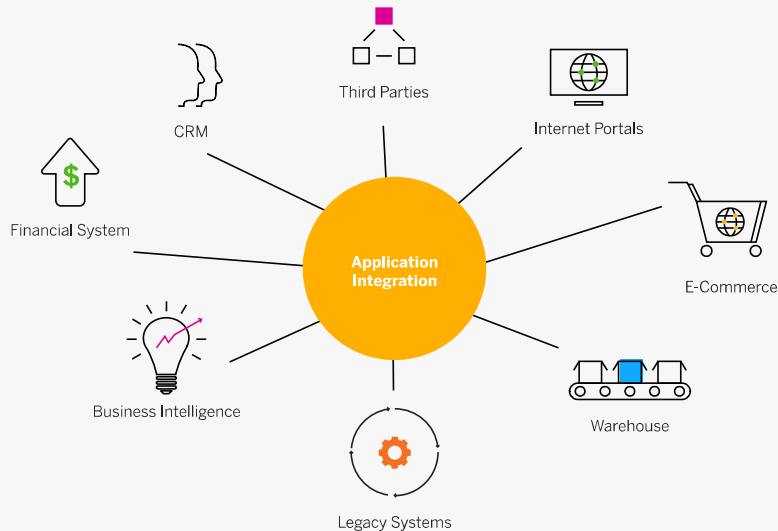
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Application integration overview

Most companies – even small and midsize ones – use over 200 applications, each designed for its own specific purpose. But these applications don't always talk to each other, creating a whole host of problems: from silos and incomplete information to errors, contradictions, and delays. By integrating data and workflows across applications, organizations can connect the enterprise – side-stepping these issues while supercharging efficiency, automation, and agility.

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Application integration connects all areas of your business – applications, processes, data, and much more – to help drive better operations and business decisions.

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What is application integration?

Application integration is the process of connecting independently designed software applications so they work together and share information in real time. Applications can be integrated no matter where they are deployed – on premise, in the cloud, or even at the edge – so businesses can remove barriers between existing on-premise systems and newer cloud apps. Through interconnected processes and data flows, application integration can not only increase efficiency, but it can also help businesses operate in new and innovative ways.

Application integration vs. data integration

While both application integration and data integration make information more accessible to the people working with it, they are not the same thing. Application integration links applications so that data can flow between them and be acted on across departments, business units, and functions.

[Data integration](#), on the other hand, takes data from different sources and cleanses, formats, and combines it into one data set that can be used to fuel analytics and business insights. Data integration uses a different set of practices, tools, and architectural procedures to this end.

Top 5 benefits of app integration

Application integration provides important benefits to businesses, including:

1. **Information sharing:** Create a single point of access across individual systems to save time searching for information. Users from different departments access updated data, helping to improve collaboration between individuals from multiple departments.
2. **Agility and efficiency:** Business processes are streamlined, increasing overall efficiency. Communication is easier, and work takes less time and effort with better functionality and control. Companies can respond quickly to changes in the market, minimizing impact to the business from unexpected disruptions.
3. **Ease of use: Application** integration provides a single, consistent access interface to multiple applications, eliminating the need for users to learn different software applications.
4. **Reduced IT investment and costs:** By connecting processes across all channels and applications, new and old software systems are easily integrated, reducing initial and ongoing software investments.

Business process optimization: With access to near-real-time data from applications available via a single click, organizations can more easily leverage [robotic process automation](#) and other process optimization technology to facilitate automated workflows.

Different approaches to integration

As companies adopt more and more applications, the need for integration has never been greater. There are several different approaches to application integration:

1. **Point-to-point integration:** The most basic type of integration, point-to-point is when a developer builds a custom integration between two apps that need to share information. Of course, modern businesses use so many applications that this type of integration presents numerous challenges, primarily around scalability.
2. **Enterprise Application Integration (EAI) and Enterprise Service Bus (ESB):** EAI uses a hub-and-spoke approach to integration in place of many different point-to-point integrations. Instead of connecting directly to each other, applications connect to a centralized hub (or “bus”) – which makes it easier to add new apps as needed. Enterprise Service Bus is the most common type of EAI. EAI and ESB are middleware solutions that are used primarily to integrate legacy and on-premise applications – they are not usually used to connect cloud or edge apps.
3. **Integration Platform-as-a-Service (iPaaS):** The most modern approach to application integration is iPaaS. An iPaaS is a cloud-based service that integrates applications, data, and processes – usually in a simple and automated way. With an iPaaS, you can build integrations between cloud and on-premise apps using APIs, event-driven actions, and data mapping:
 4. **Application programming interfaces (APIs):** APIs are procedures and rules that define how different pieces of software interact, allowing applications to communicate with each other. APIs tap into the specified data structure to help developers quickly access the functionality of other applications.
 5. **Event-driven actions:** An event-driven action occurs when a trigger – an event – kicks off a procedure or set of actions. The following are examples of event-driven actions: the invoicing and billing of a customer after an order is submitted, or managing an opportunity-to-order workflow from an ERP system to a CRM system.

6. **Data mapping:** The mapping of data in one system to another defines how the data will be exchanged, making it easier to export, group, or analyze later. For example, a customer enters information into a contact form within one application. The data is then mapped to corresponding fields in adjacent applications.

Application integration examples

Today, companies of all sizes and industries use application integration to connect processes and data exchanges as well as to drive efficiencies for the business:

- Delaware Consulting International CVBA is a global consulting firm operating in 12 countries. The firm integrates various cloud systems to keep the business moving forward and to ensure smooth operations. After building a digital integration hub, the firm's business grew by 487%.
- Endress+Hauser reduces total cost of operations using an always-up-to-date B2B cloud integration platform, with no downtime and instant access to new features as they become available. After implementing the platform, the company increased project speed by five times, reduced costs, and achieved digital net sales of €50M through its B2B cloud integration.
- Harrods uses cloud integration solutions to link multiple partner systems and technologies across cloud and on-premise landscapes. With standardized connections and a simpler integration environment, the iconic UK department store is able to meet demand for over 8 million transactions per month – while minimizing downtime.
- Financial services firm [Deutsche Börse](#) developed a solution architecture that linked workflows across multiple cloud applications, paving the way for end-to-end processes and greater collaboration across business units and process stages.
- [Sycor](#) integrated their enterprise applications on one digital platform, simplifying a highly customized IT landscape and multiple workflows. The result was better employee experiences and the ability to support rapid growth and innovative technologies.

The evolution of application integration

The need to integrate different applications first came to bear in the 1980s after companies began using technology to connect on-premise business applications. For example, early [enterprise resource planning \(ERP\)](#) systems were commonly integrated with accounting, human resources, distribution, and manufacturing systems, as well as other back-end systems. Integration between these applications took place at the data level (between databases), performed largely by data integration tools and technologies, versus at the application level.

In the 1990s, cloud-based software-as-a-service (SaaS) applications arrived and it became increasingly clear that a different method of integration was needed to optimize communication between these newer cloud applications and existing on-premises applications. Application integration technologies quickly evolved to handle the communication and harmonization in this new hybrid landscape.

By the turn of the century, application programming interfaces (APIs) arrived – and provided businesses with the ability to easily syndicate data over the Internet, extending beyond organizational silos, and use data from even more sources for deeper, richer insights.

These days, many organizations are turning to [integration platforms-as-a-service \(iPaaS\)](#) to handle all their integration needs. These suites of cloud services provide prebuilt connectors, API management tools, and other technology to help companies quickly build and manage integration flows across an unlimited number of applications. iPaaS platforms make it easier to digitalize and automate processes and share data across the extended enterprise.

Overcoming common application integration challenges

With careful planning and the right tools, application integration can help businesses thrive in a competitive environment. However, integration can also be a complex undertaking. Here are some of the common challenges organizations encounter when implementing application integration projects, as well as some strategies to mitigate them:

- **Lack of executive support or strategy:** Timely decisions at the executive level and a detailed strategy are imperative to the success of an application integration initiative. Engage all stakeholders early on and clearly communicate the goals and benefits that will be achieved through the project to get buy-in and encourage participation.
- **Poor communication and lack of collaboration:** Execution may be thwarted due to internal politics and ineffective communication. Create a strong plan to build consensus and support change management at the start of the project.
- **Inadequate tools:** Without the proper tools to support the rollout, the overall project may fail. Source and implement tools that support a flexible and scalable implementation early on in the process. An iPaaS is one solution as it will include all of the necessary tools and technologies.
- **Misguided strategy:** Many organizations view app integration as a product when it is actually an architecture. Align teams around this strategy at the start of the implementation to ensure everyone is on the same page.
- **Limited focus:** Although the biggest investment of time will be in the implementation of the integration workflows, don't overlook the importance of security performance and monitoring.
- **Workforce deficiencies:** Before the project kicks off, ensure adequate resources and skill sets are in place to support the project. Supplementing existing resources may be required.

To reap the full rewards of application integration, having a robust strategy, an executive sponsor, and the expertise and skills to guide, build, and execute the strategy are key – and these factors are all supported by a comprehensive set of application integration tools.

What to look for in an iPaaS

A good iPaaS includes a full suite of tools, services, and technologies like AI and machine learning to accelerate the entire application integration process. Here are some features to look for when shopping for your own integration platform-as-a-service:

- **Guided assessments and methodologies** for simplifying integrations, generating documentation, and collaborating more effectively.
- **Cloud integration** across on-premise and hybrid landscapes made easier through prebuilt integrations, AI-assisted interfaces, crowdsourced recommendations, and more.
- **An open framework and tools** to simplify and standardize connectivity – including open data formats, open connectors for third-party applications, common data definitions, and bulk data uploads for data with different service architectures.
- **API management**, including designing, modeling, publishing, and managing them while also supporting creating new business models and services for the API economy.
- **Event-driven architecture** that allows apps to communicate in real time through asynchronous events, such as when a customer places an order, for a faster response time across distributed environments.
- **Trading partner management** to streamline B2B integration scenarios among multiple business partners and allow for easier collaboration.
- **Built-in compliance**, including secure management and transmission of e-documents, automated information exchanges, and regulatory standards tracking.
- **AI, RPA, and other advanced technologies** for faster, easier connections and, potentially, to automatically common business applications that are used routinely.
- **Reusable components and low-code integration options** that can support multiple business users, not just IT professionals and developers.

The combination of these features can vary across technology vendors.

Frequently asked questions

> What is an example of application integration?

> What is process integration?

> What is API management?

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> What is integration platform as a service (IPaaS)?

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